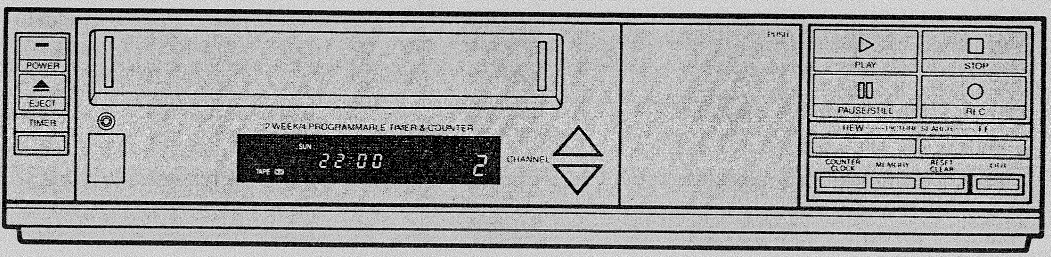
SAMSUNG
Electronics

VHS
PAL/SECAM
HQ

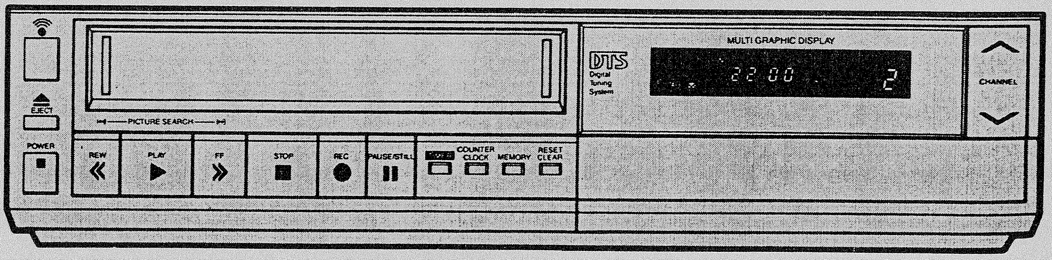
SERVICE MANUAL
VQ-720/721

SVM-P7-058-1E

VIDEO CASSETTE RECORDER


POWER
EJECT
TIMER
2 WEEK/4 PROGRAMMABLE TIMER & COUNTER
SUN
TAPE
22:00
2
CHANNEL
PUSH
PLAY
STOP
PAUSE/STILL
REC
REW
PICTURE SEARCH
FF
COUNTER CLOCK
MEMORY
RESET CLEAR
OFF

VQ-720


MULTI GRAPHIC DISPLAY
DTS
Digital Tuning System
22:00
2
CHANNEL
EJECT
PICTURE SEARCH
POWER
REW
PLAY
FF
STOP
REC
PAUSE/STILL
COUNTER CLOCK
MEMORY
RESET CLEAR

VQ-721

Printed in Korea

FEB.1989

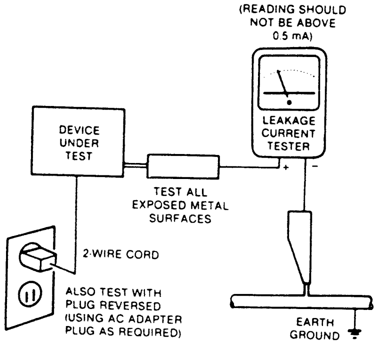
SAFETY PRECAUTIONS

1. ***Before returning a Video Cassette Recorder to the customer,*** always make a safety check of the entire instrument, including, but not limited to the following items:

   a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reassembling the instrument, be sure to put back in place all protective devices, including, but not limited to nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks.
   Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

   b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) excessively wide cabinet ventilation slots, and (2) improperly fitted and/or incorrectly secured cabinet covers.

   c. **Antenna Cold Check**—With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, to each of the coaxial connectors. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.


(READING SHOULD NOT BE ABOVE 0.5 mA)
DEVICE UNDER TEST
LEAKAGE CURRENT TESTER
+
−
TEST ALL EXPOSED METAL SURFACES
2-WIRE CORD
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

AC Leakage Test

   d. **Leakage Current Hot Check**—With the instrument completely reassembled plug the AC line cord directly into a 220V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) *C101. 1 Leakage Current for Appliances* and Underwriters Laboratories (UL) *1410, (50.7).* With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, controls shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test.

   ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR CONNECTING ANTENNA OR ACCESSORIES.

   e. **AC Leakage Test**

   Avoid shock hazards. The television instrument, accessory, or cable(s) to which this VCR is connected should have the applicable sections of the antenna cold check and the leakage current hot check performed. Do not connect this VCR to a TV antenna, cable or accessory that exhibits excessive leakage currents.

2. Read and comply with all caution and safety-related notes on or inside the VCR cabinet and chassis.

3. **Design Alteration Warning**—Do *not* alter or add to the mechanical or electrical design of this Video Cassette Recorder. Design alterations and additions, including, but not limited to, circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you, the servicer responsible for personal injury or property damage resulting therefrom.

4. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts—be sure that leads and components do not touch thermally hot parts c. the AC supply, and d. antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.

5. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

6. PRODUCT SAFETY NOTICE
   Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a (*) or (⚠) on schematics and parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. Products Safety is under review continuously and new instructions are issued whenever appropriate.

Electrostatically Sensitive (ES) devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices.* Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with Es devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a *grounded-tip* soldering iron to solder or unsolder ES devices.

4. Use only an *anti-static* type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do *not* use freon-propelled chemicals. These can generate electrical charges sufficient to damage Es devices.

6. Do *not* remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement Es device, touch the protective material to the chassis or circuit assembly into which the device will be installed. **CAUTION:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

•SPECIFICATIONS

Format : VHS PAL/SECAM standard
Recording System : Rotary, azimuth two-head helical scanning system
Television System : PAL/SECAM color and B/W signal
Tape Width : 12.65 mm (1/2 inch)
Tape Speed : 23.39 mm/sec
Record/Playback Time : 4 hours with E-240 Tape
FF/REW Time : Less than 6 min. with E-180
Heads : 1) Video; 2 Rotary heads
  2) Audio/Control;
    1 stationary head (Mono)
  3) Full track erase;
    1 stationary head
Video
  Input : 0.5 to 2.0 Vp-p;
    75 ohm unbalanced
  Output : 1.0 Vp-p;
    75 ohm unbalanced
  Signal-to-Noise Ratio : Better than 40 dB
  Horizontal Resolution : More than 240 Lines
Audio
  Input : −8 dBm, 50 Kohm unbalanced
  Output : −4 dBm, 1 Kohm unbalanced
  Signal-to-Noise Ratio : Better than 40 dB
  Frequency Response : 100Hz to 8,000Hz (−3 dB)

Receiving Channels : VHF
  Band I: E_2—E_4, S_1—S_2
    RI-RIII
  Band II: RIV-RV
  Band III: E_5—E_{12}, S_3—S_{10}
    S_{11}—S_{20}, RVI-RXII
  UHF
  Band IV/V: CH21-CH69
Antenna : 75 ohm unbalanced
RF Output : UHF channel 32 to 40
  (adjustable), Preset to 36
Power Requirement : AC 220V, 50Hz
Operating Temperature : 5 to 40 DEG. C (41°F—104°F)
Operating Humidity : 10%—75%
Power Consumption : Approx. 28 watts
  (When the POWER button is
  OFF Approx. 7.0 watts)
Dimensions : 420(W)×93(H)×345(D) mm
Weight : 14.55 lbs (6.6 kg)

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1. GENERAL DESCRIPTION

•GENERAL INFORMATION

•Operation Modes

Play, still, forward search, reverse search, record, record pause, fast forward and rewind operations are possible. 2-Video Head System uses tow video heads on the upper drum Two video heads (CH-1/CH-2: +60 um/−80 um) are used during record and playback.

•Unattended (Timer) Recording

The programmable timer can be preset up to two weeks in advance to record up to 4 preselected programs. The Timer turns your VCR on and off and changes channels automatically.

•One Touch Recording (OTR)

Express Recording permits unattended recording with the touch of a button. You can record a program for the time from 1 minute to the desired amount without setting the Programmable Timer.

•Memory Stop

When the Multifunction Display is in the "Counter" Position, a tape that is being rewound automatically stops when the Tape Counter reads 9999.

•Automatic Power On

The VCR will automatically turn power on when you insert a cassette without pushing POWER button.

•Automtic Playback

When you insert the cassette with the Record Safety Tab removed, the VCR will turn power on and playback automatically without pushing POWER and PLAY button. If you use the cassette with Record Safety Tab intact, the VCR will turn power on automatically and be in STOP mode but do not playback.

•Automatic Rewind

The VCR automatically rewinds the tape when the end of the tape is reached. To avoid accidental erasure during Timer Recording or Express Recording, it stops at the end of the tape but does not rewind.

•Mode Indication in the Multifunction Display

The VCR modes will be indicated in the Multifunction Display with a sign or a character of white or red color so the operator can see the modes easily.

•Remote Control with Special Effects

Hand-Held unit offers play, stop, record, rewind, fast forward, pause/still, direct position selection (17 keys), channel up/down, power on/off, one touch search (forward or reverse).

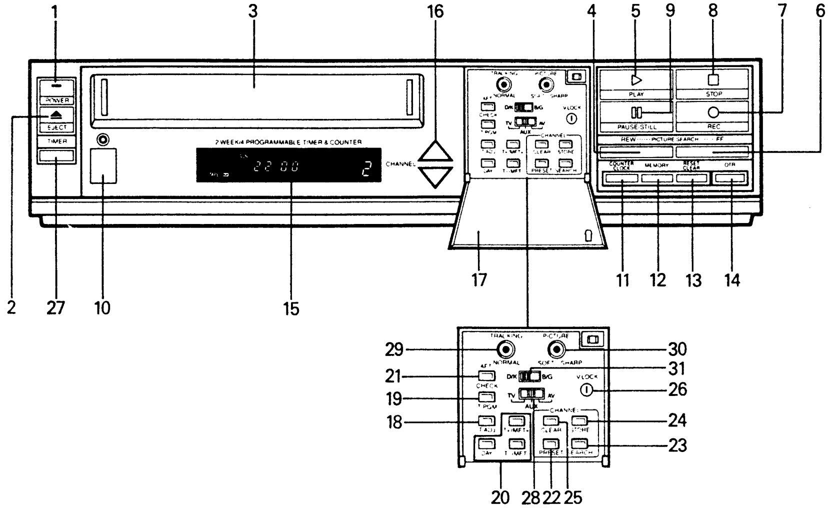
•Dual Receiving Tuner (PAL B/G and SECAM D/K)

FS Tuner can receive total 61 channels in SECAM D/K signal.

Receiving channels: VHF 12 channels
UHF 49 channels

Also this tuning system enables you receive PAL B/G signal manual tuning.

•OPERATING CONTROLS


1
3
16
4
5
9
8
7
6
POWER
EJECT
TIMER
2 WEEK/4 PROGRAMMABLE TIMER & COUNTER
CHANNEL
PLAY
STOP
PAUSE STILL
REC
REW
PICTURE SEARCH
FF
COUNTER CLOCK
MEMORY
RESET CLEAR
OTR
2
27
10
15
17
11
12
13
14
TRACKING
PICTURE
NORMAL
SOFT
SHARP
AFT
D/K
B/G
V.LOCK
CHECK
T-PGM
TV
AV
AUX
T-ADJ
CLEAR
STORE
DAY
PRESET
SEARCH
29
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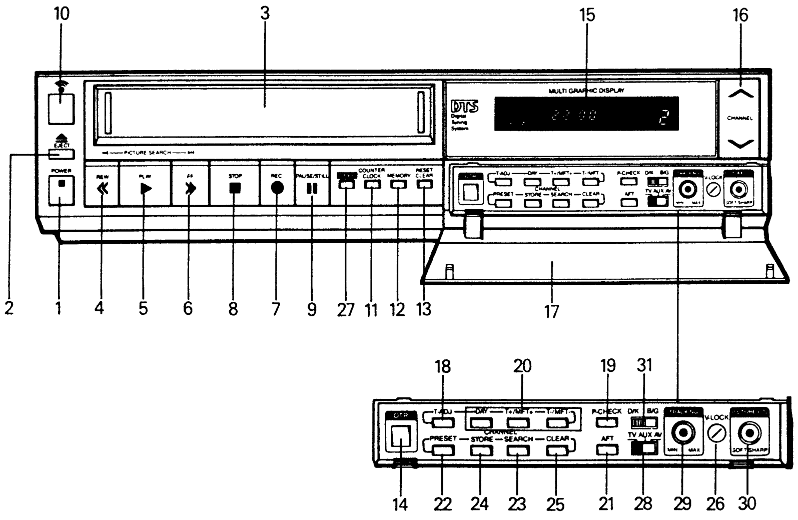
(VQ-720.VR-4000)


10
3
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16
MULTI GRAPHIC DISPLAY
DTS
Digital Tuning System
CHANNEL
EJECT
POWER
PICTURE SEARCH
REW
PLAY
FF
STOP
REC
PAUSE/STILL
COUNTER CLOCK
MEMORY
RESET CLEAR
2
1
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11
12
13
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18
20
19
31
T-ADJ
DAY
T+/MPT+
T-/MPT-
P-CHECK
D/K
B/G
V.LOCK
PRESET
STORE
SEARCH
CLEAR
CHANNEL
AFT
TV AUX AV
OTR
14
22
24
23
25
21
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29
26
30

(VQ-721)

Fig. 1 FRONT VIEW

1. POWER BUTTON
2. EJECT BUTTON
3. VIDEO CASSETTE COMPARTMENT
4. REW (Rewind/Reverse Picture Search) BUTTON
5. PLAY BUTTON
6. F.F (Fast Forward/Forward Picture Search) BUTTON
7. REC (RECORD) BUTTON
8. STOP BUTTON
9. P/S (PAUSE/STILL) BUTTON
10. INFRARED REMOTE SENSOR
11. TAPE COUNTER/CLOCK BUTTON
12. MEMORY BUTTON
13. RESET/CLEAR BUTTON
14. O.T.R. (One Touch Recording) BUTTON
15. FUNCTION DISPLAY INDICATORS
16. CHANNEL UP (Λ)/DOWN (V) BUTTONS
17. CONTROL PANEL
18. T-ADJ BUTTON
19. T-PGM/CHECK BUTTON
20. TIMER CONTROLS
21. AFT BUTTON
22. PRESET BUTTON
23. SEARCH BUTTON
24. STORE BUTTON
25. CLEAR BUTTON
26. V-LOCK CONTROL
27. TIMER BUTTON
28. TV/AUX/AV SELECT SWITCH
29. TRACKING CONTROL
30. PICTURE CONTROL
31. D/K, B/G SELECT SWITCH

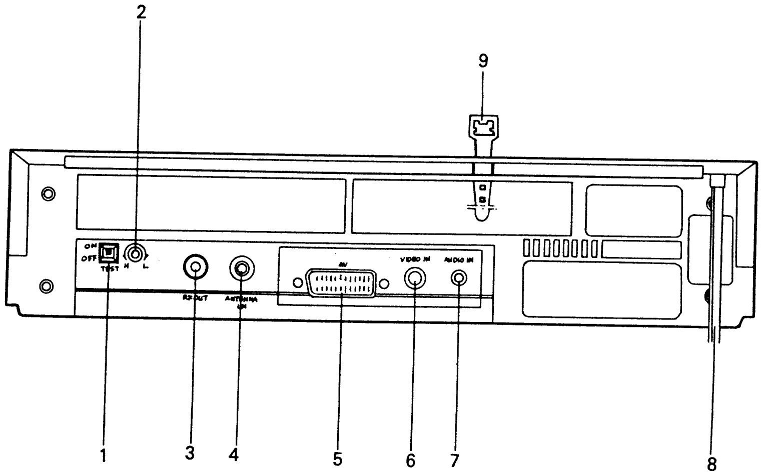

2
9
ON
OFF
TEST
RF OUT
ANTENNA IN
AV
VIDEO IN
AUDIO IN
1
3
4
5
6
7
8

Fig. 2 REAR VIEW

1. TEST ON/OFF SWITCH
2. RF CHANNEL PRE-SET
3. RF OUT
4. ANTENNA IN
5. AV-CONNECTOR
6. VIDEO IN
7. AUDIO IN
8. MAINS LEAD
9. WIRE CLAMPER

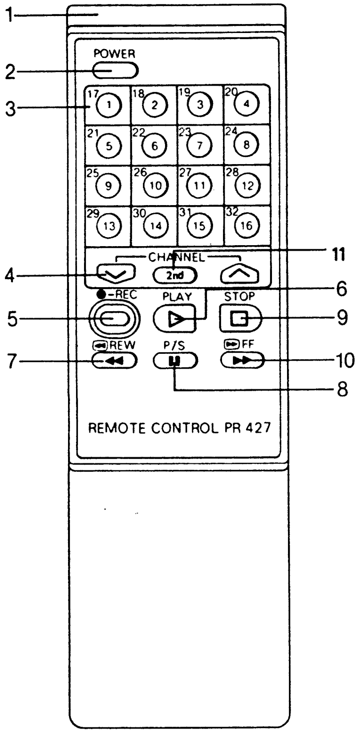


Fig. 4 REMOTE CONTROLER

REMOTE CONTROLLER

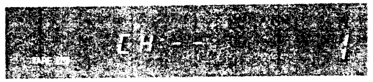
1. **Signal Transmission Window**
   Transmits signals from the remote control to the VCR.
2. **POWER Button**
   Press to turn VCR power on and off.
3. **Direct Position Select Button**
   Press the position number which a desirous channel memorized.
4. **CHANNEL UP/DOWN Buttons**
   Press to change the channels.
5. **REC (Record) Button**
   Press to start recording.
6. **PLAY Button**
   Press to play prerecorded material.
7. **REW (Rewind/Reverse Picture Search) Button**
   Press to rewind the tape rapidly after either recording or playing. Also to make reverse scan program material in the PLAY mode.
8. **P/S (PAUSE/STILL) Button**
   Press to stop the picture on screen during playback or for momentary pause during recording.
9. **STOP Button**
   Press to stop recording or playing, etc.
10. **FF (Fast Forward/Forward Picture Search) Button**
    Press to move the tape forward rapidly. Press to make forward scan the program material in the PLAY mode.
11. **Second Channel Button.**
    Press to select position number 17 to 32.

TUNING TV PROGRAMMES

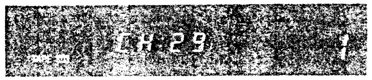
There are two possibilities for tuning television programmes to your SAMSUNG VCR—AUTOMATICALLY or MANUALLY.

Automatic Tuning

1. Switch on the video recorder by pressing the POWER button, and select the broadcast system.
2. Press PRESET button, then "CH:--1" will appear in the display window.

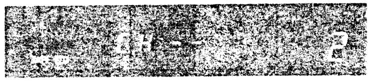


3. Press SEARCH button, then the display will change as the automatic search system scans the television channels available.
   On reception of a TV channel with sufficient signal strength the automatic search will stop (Example: CH 29 is available).



4. If the picture quality is poor, press MFT+ or MFT– button, then the channel number in the display will start to flash quickly.
   If the picture quality of the signal is good, press STORE button to open the tuner memory.

5. If the number 29 is the channel number you wish to store, simply press the STORE button and the TV channel 29 will be stored behind Programme 1, and Programme number will increase.

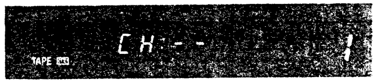


6. Repeat the same procedure until you have tune and stored 32 TV channel that you wish to store in your area.
7. After all channel have been stored, you have to press the PRESET button.
8. Press AFT button for automatic fine tuning.

MANUAL TUNING

You may also tune the TV channel you can receive in your area by a direct input of the channel numbers. Please note that you can only use this tuning method if you know the correct channel numbers. If you are in any doubt, you should use the automatic tuning technique.

1. Press PRESET button then "CH:--1" will appear in the display window.



2. To select the channel number you need, use the CHANNEL/PROGRAMME UP (Λ)/DOWN (V) button on the front of the VCR or remote control until the correct channel number is shown in the display.

3. Press STORE button to open the memory, then the programme number will increase automatically.

4. Repeat the same procedure until you have tuned and stored 32 TV stations that you wish to store in your area.
5. After all channel have been stored, you have to press the PRESET button.
6. Press AFT button for automatic fine tuning.

Setting of TV station is now complete.

Note
If you want to erase stored TV station in specified programm number, press the CLEAR button, then the channel number will flash one time.
And if you want to know channel number that is stored behind programme number, press STORE button. These functions are only available in PRESET mode.

Selecting TV Programmes by remote control

Press any of the button 1-16 to tune the TV channels you have programmed behind these numbers.
If the number you want is higher than 16, first press button 2nd and then press the button 17-32.

Note: When you press programme number that TV station is not stored the programme number is not appear in the display.

CLEANING AND LUBRICATION

CLEANING TAPE MECHANISM

Periodic cleaning is necessary to insure continued excellent performance of the tape mechanism. To clean the following parts use "Kim Wipes" and solvent.

1. Capstan shaft.
2. All idler wheels.
3. All tape guide posts.
4. Supply and take-up reels.
5. Impedance roller.
6. Pinch roller.
7. Idler belt.
8. Capstan belt.
9. Capstan motor pulley.
10. Loading belt
11. Loading motor pulley
12. Loading pulley.

To clean video heads, full erase head, and audio/control (A/C) head use only head cleaning kit and solvent.

Note: When cleaning video heads move the cleaning stick in the direction of head rotation. Wiping in a vertical motion may damage the heads.

LUBRICATION TAPE MECHANISM

The tape transport mechanism is properly lubricated at the factory. In normal use cycles, and with average environmental conditions, additional lubrication should not be required during the first year of operation.

Depending on use and environmental conditions, periodic lubrication may be required. When relubricating, remove old lubricant first, then sparingly apply new lubricant. (Execessive lubricant may be transferred to other assemblies causing multifunction).

Use grease on the following parts after 1,000 hours operation. (See exploded view for location.)

1. Between base pole (L) assembly and mecha chassis assembly.
2. Between level review cam and mecha chassis assembly.
3. Between base pole (R) assembly and mecha chassis assembly.
4. Between plate main slide and mecha chassis assembly.
5. Between I.B slide assembly and plate main slide.
6. Between gear loading (L) and gear loading (R).
7. Between main gear, eject gear and worm.
8. A part of flywheel shaft contacted to the Braket Capstan Flywheel.

Oil may be required for the following parts every 1,000 hours operation. (See exploded view for location.)

1. Supply reel and take-up reel shafts.
2. Links of both loading arms.
3. Between shaft of tension arm and chassis.
4. Pressure roller arm.
5. Shaft of load pulley.

Other parts which are not listed above do not require lubrication, except if a part is replaced. Use appropriate oil or grease as indicated on exploded view.

ABBREVIATIONS

	2X	Double
	4.43 MHz	Color Sub Carrier
A	ACC	Automatic Color Carrier
	ACK	Automatic Color Killer
	ADD	Adder
	AFC	Automatic Frequency Control
	AFT	Automatic Fine Tuning
	AGC	Automatic Gain Control
	AL	Always
	ALC	Automatic Level Control
	AMP	Amplifier
	APC	Automatic Phase Control
	AUD	Audio
	AUX	Auxillary
B	BATT	Battery
	BE	Burst Emphasis
	BD	Burst De-Emphasis
	BG	Burst Gate
	BH	Power Supply for Selecting VHF High Band
	BL	Power Supply for Selecting VHF Low Band
	BM	Power Supply for Selecting VHF Mid Band
	BPF	Band Pass Filter
C	C. FG	Capstan Frequency Generator
	C. FREE RUN	Capstan Free Run
	C. MEMORY	Counter Memory
	C. SYNC	Composite Sync
	C. RESET	Counter Reset
	C. REVERSE	Counter Reverse
	C/R	Condenser/Resister
	CAFC	Capstan Auto Frequency Control
	CAPC	Capstan Auto Phase Control
	CATV	Cable TV
	CAR	Carrier
	CB	Carrier Balance
	CAP	Capstan
	CCD	Charge Coupled Devices
	CH	Channel
	CHAR.	Character
	CHROMA	Chrominance
	CM	Capstan Motor
	CNT	Counter
	COM	Common
	COMP.	Comparator
	COMPE	Compensator
	CON	Control
	CONV	Converter
	CST	Cassette
	C-EMP	Current Emphasis
	C-ERR	Capstan Error

D	D.FG	Drum Frequency Generator
	D.M.M	Delayed Monostable Multivibrator
	D.O	Drop Out
	D.O.C	Drop Out Compensator
	D.PG	Drum Pulse Generator
	D/A	Digital-to-Analog
	D/C	Dark/Clip
	D/W	Dark/White
	DAFC	Drum Auto Frequency Control
	DAPC	Drum Auto Phase Control
	DE-EMPH	De-Emphasis
	DEM	Demodulator
	DET	Detector
	DEV	Deviation
	DL	Delay Line
	DLIM	Double Limiter
	DLYD	Delayed
	DM	Drum Motor
	DN	Down
E	E-E	Electronic-to-Electronic
	EMPH	Emphasis
	ENV.	Envelope
	EQ	Equalizer
	EXT	External
F	F-V	Frequency-to-Voltage Converter
	F.FWD	Fast Forward
	FB	Feed Back
	FH	Horizontal Frequency
	FG	Frequency Generator
	FM	Frequency Modulator
	FSC	Sub Carrier Frequency
	FWD	Forward
G	GEN	Generator
	GND	Ground
H	HPF	High Pass Filter
	HSS	Horizontal Sync Separator
I	I/O	Input/Output
	IF	Intermediate Frequency
	INJ	Injector
	IR	Infrared
L	L/C	Luminance/Chrominance
	LED	Light Emitting Diode
	LIM	Limitter
	LPF	Low Pass Filter
	LS	Latch Strobe
	LUMA	Luminance
M	M.C	Main Converter
	MIX	Mixer
	MM	Monostable Multivibrator
	MFT	Manual Fine Tunning
	MOD	Modulator

N	NR	Noise Reduction
	N.C	No Change
	NORM	Normal
O	OSC	Oscillator
	OTR	One Touch Recording
P	PB	Play Back
	PC	Power Control
	PG	Pulse Generator
	PIF	Picture Intermidiate Frequency
	PL	Preloading
	PLL	Phase Lock Loop
	PLS	Pulse
	PRG	Program
	PS	Phase Shift
	PWM	Pulse Width Modulation
	PWR	Power
	P/R	Playback/Record
	P/S	Pause/Still
R	REC	Record
	REC. SAF.	Record Safety
	RECT	Rectifier
	REF	Reference
	REG	Regulator
	REV	Reverse
	REW	Rewind
	RF	Radio Frequency
S	S H	Sample and Hold
	SC	Sub Converter
	SIF	Sound Intermidiate Frequency
	SEP	Separator
	SP	Standard Play
	SRCH	Search
	SRV	Servo
	SW 25Hz	Head Switching Pulse
	SYNC	Synchronizing Signal
	SYSCON	System Control
T	T. REEL	Take-up Reel Sensor
	T. RESET	Timer Reset
	TP	Test Point
	TRK	Tracking
U	U/D	Up/Down
	UL	Unloading
	UPS	Unloading Play Still
V	V-REF	Voltage Reference
	V-SYNC	Vertical Sync
	VCO	Voltage Controled Oscillator
	VCR	Video Cassette Recorder
	VIF	Video Intermidiate Frequency
	VSS	Vertical Sync Separator
	VHS	Video Home System
	VP	
	VXO	Voltage Controlled Crystal Oscillator
W	W/C	White/Clip
	W/D	White/Dark
X	XPR	Express Recording
	μP	Microprocessor

2. DISASSEMBLY

INSTRUMENT DISASSEMBLY

Top Cabinet Removal (Fig. 1)

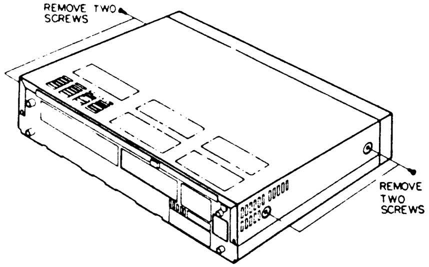

REMOVE TWO SCREWS
REMOVE TWO SCREWS

Fig. 1 Top Cabinet Removal

1. Remove four (4) screws located at the sides of the top cabinet.
2. Carefully lift the back of the top cabinet and slide it to the rear to remove.

Bottom Cover Removal (Fig. 2)

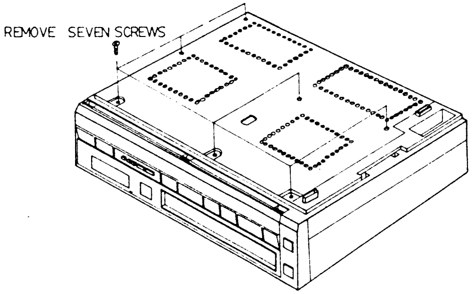

REMOVE SEVEN SCREWS

Fig. 2 Bottom Cover Removal

1. Remove seven (7) screws holding the botto cover.

Front Panel Removal (Fig. 3) (Option)

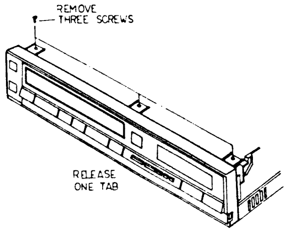

REMOVE THREE SCREWS
RELEASE ONE TAB

Fig. 3 Front Panel Removal

1. Remove the top cabinet and the bottom cover. (See Figs. 1, 2)
2. Remove three (3) screws from the top of the front panel.
3. Release one (1) tabs from the bottom of the front panel.
4. Tilt the front panel forward to remove.

Function Switch Circuit Board Removal (Fig. 4) (Option)

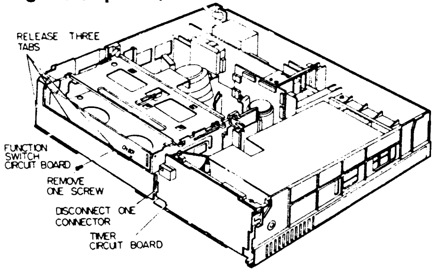

RELEASE THREE TABS
FUNCTION SWITCH CIRCUIT BOARD
REMOVE ONE SCREW
DISCONNECT ONE CONNECTOR
TIMER CIRCUIT BOARD

Fig. 4 Function Switch Circuit Board Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Remove one (1) screw holding the function switch circuit board.
3. Release three (3) tabs on the circuit board.
4. Disconnect one (1) connector on this board.

Timer/Input Key Circuit Board Removal (Fig. 5) (Option)

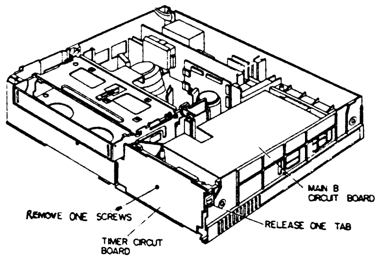

MAIN B CIRCUIT BOARD
REMOVE ONE SCREWS
RELEASE ONE TAB
TIMER CIRCUIT BOARD

Fig. 5 Timer/Input Key Circuit Board Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Remove one (1) screws holding the timer/input key circuit board.
3. Disconnect two (2) connectors (CN601), (CN203) on the main circuit board, and relase one (1) tab on the timer/input key.
4. Taking care of the cable assemblies, pull the circuit board forward to relase.

Note: Before removal of the timer/input key circuit board, make sure that the function switch circuit board.

Main B Circuit Board Removal (Fig. 6)

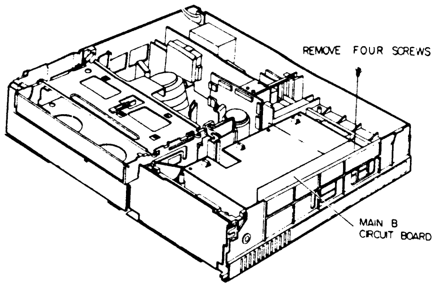

REMOVE FOUR SCREWS
MAIN B CIRCUIT BOARD

Fig. 6 Main B Circuit Board Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Disconnect on (4) connector (CN301 CN303 CN304) on the Main-B board
3. Remove four (4) screws on the Main B PC Board and the hinge from the frame.
4. Pull out the board in the direction of the arrow.

Main A Circuit Board Removal (Fig. 7)

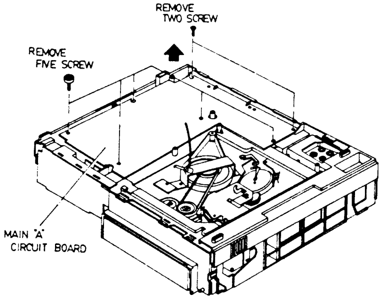

REMOVE TWO SCREW
REMOVE FIVE SCREW
MAIN 'A' CIRCUIT BOARD

Fig. 7 Main-A Circuit Board Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Disconnect ten (10) connectors between the main circuit board and the other circuit boards.
3. Remove seven (7) screws on the main board.
4. Lift up the assembly in the direction of the arrow.

Regulator Circuit Board Removal (Fig. 8)

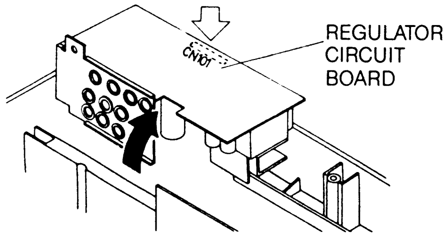

CN101
REGULATOR CIRCUIT BOARD

Fig. 8 Regulator Circuit Board Removal

1. Follow the procedure for removing the panels.
2. Remove three (3) screws from the frame.
3. Disconnect one (1) a connector (CN101), on the regulator circuit board.
4. Remove the IC from the Lower Drum.
5. Taking care of the cable assemblies, lift the regulator circuit board upward to relase.

PWB-Deck Joint Removal (Fig. 9)

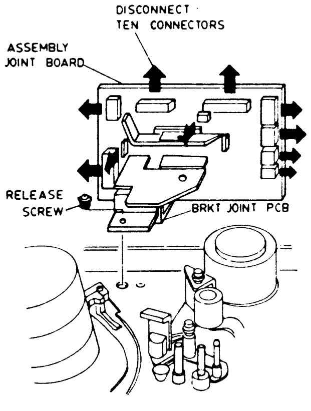

DISCONNECT TEN CONNECTORS
ASSEMBLY JOINT BOARD
RELEASE SCREW
BRKT JOINT PCB

Fig. 9 PWB-Deck Joint Removal

1. Removal the top panel. (See Fig. 1)
2. Disconnect ten (10) connectors (Fig. 9)
3. Remove the screw holding PWB-deck joint (G-7).

MECHANICAL DISASSEMBLY

Tape Transport Mechanism Identification.

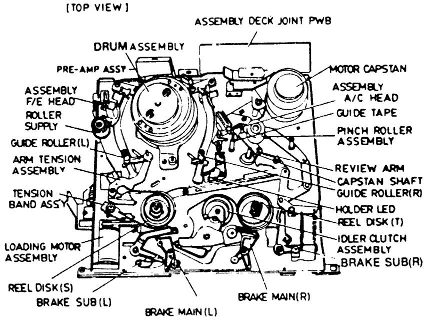

[TOP VIEW]
ASSEMBLY DECK JOINT PWB
DRUM ASSEMBLY
PRE-AMP ASSY
ASSEMBLY F/E HEAD
ROLLER SUPPLY
GUIDE ROLLER(L)
ARM TENSION ASSEMBLY
TENSION BAND ASS'Y
LOADING MOTOR ASSEMBLY
REEL DISK(S)
BRAKE SUB(L)
BRAKE MAIN(L)
BRAKE MAIN(R)
MOTOR CAPSTAN
ASSEMBLY A/C HEAD
GUIDE TAPE
PINCH ROLLER ASSEMBLY
REVIEW ARM
CAPSTAN SHAFT
GUIDE ROLLER(R)
HOLDER LED
REEL DISK(T)
IDLER CLUTCH ASSEMBLY
BRAKE SUB(R)

Fig. 10 Tape Transport Mechanism-Top View

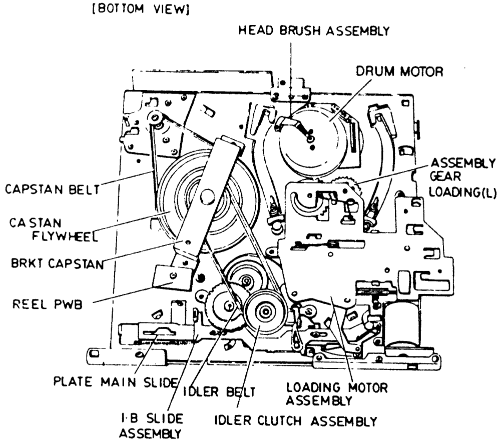

[BOTTOM VIEW]
HEAD BRUSH ASSEMBLY
DRUM MOTOR
ASSEMBLY GEAR LOADING(L)
CAPSTAN BELT
CAPSTAN FLYWHEEL
BRKT CAPSTAN
REEL PWB
PLATE MAIN SLIDE
IDLER BELT
LOADING MOTOR ASSEMBLY
I-B SLIDE ASSEMBLY
IDLER CLUTCH ASSEMBLY

Fig. 11 Tape Transport Mechanism-Bottom View

Housing Assembly Removal (Fig. 12)

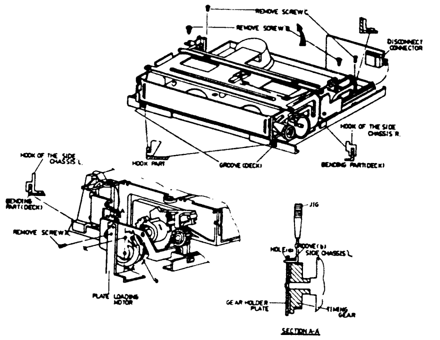

REMOVE SCREW C
REMOVE SCREW B
DISCONNECT CONNECTOR
HOOK OF THE SIDE CHASSIS R.
BENDING PART(DECK)
GROOVE (DECK)
HOOK PART
HOOK OF THE SIDE CHASSIS L.
BENDING PART(DECK)
REMOVE SCREW A
PLATE LOADING MOTOR
JIG
HOLE(a)
GROOVE(b)
SIDE CHASSIS L
GEAR HOLDER PLATE
TIMING GEAR
SECTION A-A

Fig. 12 Housing Assembly Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Disconnect connector from PWB-deck Joint.
3. Remove the screw. (A)-Joint screw of housing and plate loading motor.
4. Remove the two screw. (B)-Joint screw of housing and frame.
5. Remove the two screw. (C)-Joint screw of housing and deck.
6. Lift the rear of the housing assembly toward arrow mark.

Note: •When reinstalling housing assembly to the deck, first insert the hook part of the housing to the groove of the deck. Second fit the hook of the side chassis (R) (L) to the bending part of the deck.

•Before jointing screws (C), fix assembling point of the timing gear and arm gear rotating the side bevel gear to the direction of arrow A

a) Assembling point is the point that the hole of the gear holder plate corresponds to the groove of the timing gear like the section A-A'.
b) Inspecting method of assembling point is as follows.
   i) When release the cassette holder after push to the direction of cassette tape loading. It must return to the initial position.
   ii) If the assembly point is not correct. It does not return to the initial position completely.

Housing Assembly Identification (Fig. 13)

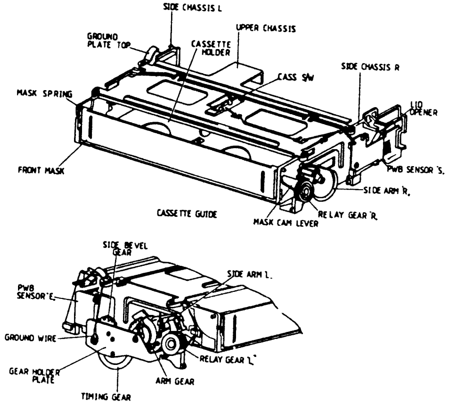

SIDE CHASSIS L
UPPER CHASSIS
GROUND PLATE TOP
CASSETTE HOLDER
SIDE CHASSIS R
CASS S/W
MASK SPRING
LID OPENER
FRONT MASK
PWB SENSOR 'S.
SIDE ARM 'R.
CASSETTE GUIDE
RELAY GEAR 'R.
MASK CAM LEVER
SIDE BEVEL GEAR
SIDE ARM L.
PWB SENSOR 'E.
GROUND WIRE
RELAY GEAR 'L'
GEAR HOLDER PLATE
ARM GEAR
TIMING GEAR

Fig. 13 Housing Assembly Identification

Housing Assembly Disassembly (Fig. 14 to 21)

1. Remove front mask. (Fig. 14)

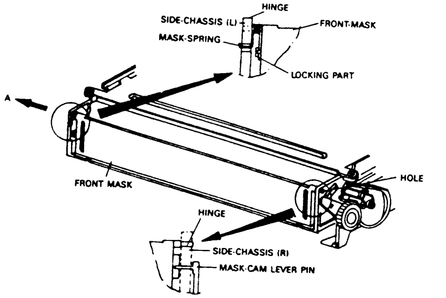

HINGE
SIDE-CHASSIS (L)
MASK-SPRING
FRONT-MASK
LOCKING PART
A
FRONT MASK
HOLE
HINGE
SIDE-CHASSIS (R)
MASK-CAM LEVER PIN

Fig. 14 Front Mask Removal

•Pulling front mask to the direction of arrow A, disintegrate a reinstalled front mask hinge part in the hole of the side-chassis (R) and disintegrate a reinstalled hinge part in the hole of the side-chassis (L) to the reverse direction.

NOTE:

- One end of the mask spring must be reinstalled at the locking part of the front mask and the other end must be reinstalled the hook part of the side chassis (L).
- Upon reinstallation of front mask slide part of right hand must be reinstalled in front of the mask cam lever pin. (Fig. 14)

2. Remove REC S/W (Fig. 15)
   Disintegrate REC S/W attaching to the guide cassette.

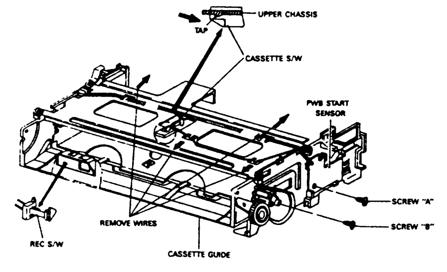

UPPER CHASSIS
TAP
CASSETTE S/W
PWB START SENSOR
SCREW "A"
SCREW "B"
REMOVE WIRES
REC S/W
CASSETTE GUIDE

Fig. 15 REC S/W / Cassette S/W / PWB Start Sensor / Side Arm (R) Removal

3. PWB end sensor remove (Fig. 16)
   - After removing the screw at the side chassis (L), disintegrate PWB end sensor.

Note: Pay attention to the TR and Photo TR attached to the PWB end sensor.

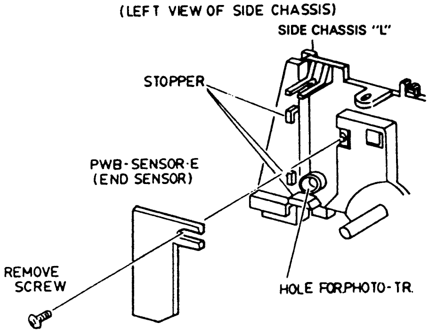

(LEFT VIEW OF SIDE CHASSIS)
SIDE CHASSIS "L"
STOPPER
PWB-SENSOR-E
(END SENSOR)
REMOVE
SCREW
HOLE FORPHOTO-TR.

Fig. 16 PWB End Sensor Removal

4. Release the tab of the cassette S/W and remove the cassette S/W. *(Fig. 15)*
5. PWB Start sensor removal (Fig. 15)
   - After removing the screw (A) at the side chassis (R), disintegrate PWB start sensor.

Note: Pay attention to the TR and Photo TR attached to the PWB start sensor.

6. Remove the wires. (Fig. 15)
   Note: Each wire is connected to REC S/W, PWB end sensor, cassette S/W and PWB start sensor.

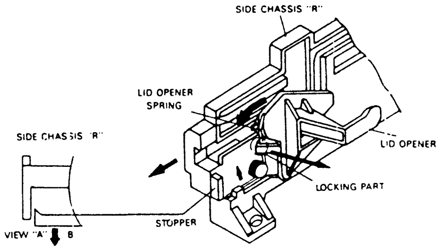

SIDE CHASSIS "R"
LID OPENER
SPRING
SIDE CHASSIS "R"
LID OPENER
LOCKING PART
STOPPER
VIEW "A"
B

Fig. 17 Lid Opener Removal

7. Lid opener removal (Fig. 17)
   - Remove the lid opener spring from the locking part of the lid opener.
   - Pull the lid opener in the direction of A. and release the locking part pulling it in the direction of B, before touching the stopper of the side chassis. (Refer to view A)
8. After removing the screw (B), remove the side arm (R) (Fig. 15)
   Note: Arm tension spring is set up to the side arm (R).

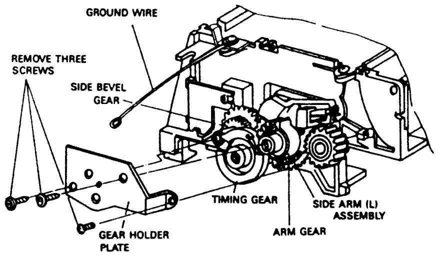

GROUND WIRE
REMOVE THREE
SCREWS
SIDE BEVEL
GEAR
TIMING GEAR
SIDE ARM (L)
ASSEMBLY
ARM GEAR
GEAR HOLDER
PLATE

Fig. 18 Timing Gear/Side Arm (L) Assembly/Side Bevel Gear Removal

9. Remove the three screws of the gear holder plate holding each gear. (Fig. 18)
   (Remove the ground wire at the same time)
10. Remove the timing gear. (Fig. 18)
11. Remove the side arm (L) assembly. (Fig. 18)
12. Remove the side bevel gear. (Fig. 18)

Notes:
- Sise arm (R) reinstalling the side arm (L) assembly. Fix at the reinstalling point of relay gear (R) and (L), and at this moment cassette holder shaft (R) (L) must be inserted in the groove of the side arm (R) (L) (Fig. 19)
- When assembling the timing gear, first tooth of the arm gear (C) must be fitted between the full tooth (A) and the half tooth (B) of the timing gear like the "A" part of the Fig. 19.

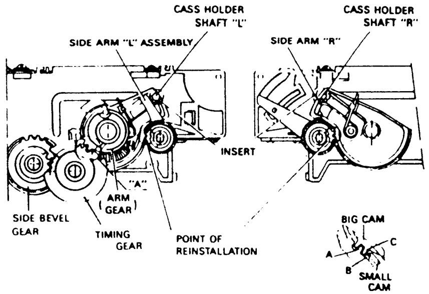

CASS HOLDER
SHAFT "L"
CASS HOLDER
SHAFT "R"
SIDE ARM "L" ASSEMBLY
SIDE ARM "R"
INSERT
"A"
ARM
GEAR
SIDE BEVEL
GEAR
TIMING
GEAR
POINT OF
REINSTALLATION
BIG CAM
C
A
B
SMALL
CAM

Fig. 19 Side Arm (R) and (L) Reinstallation

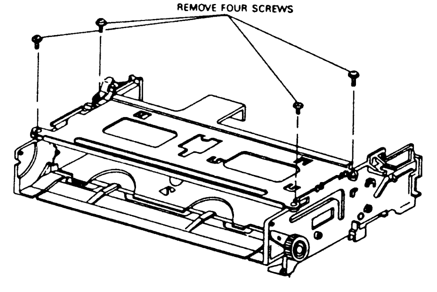

REMOVE FOUR SCREWS

Fig. 20 Upper Chassis Removal

13. After removing four screws, pull the upper chassis upward to remove. (Fig. 20)
14. Side Arm (L) Assembly Remove. (Fig. 21)
    1) Release the eject spring.
    2) Remove the arm gear.
    3) Release the arm tension spring.

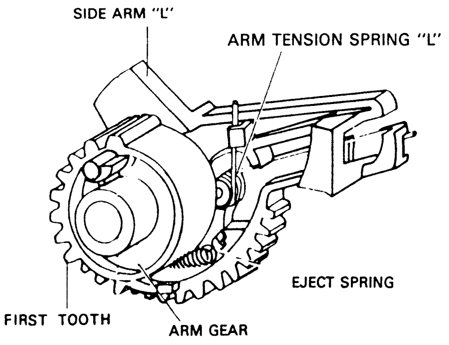

SIDE ARM "L"
ARM TENSION SPRING "L"
EJECT SPRING
FIRST TOOTH
ARM GEAR

Fig. 21 Side Arm (L) Assembly Removal

Mechanical Chassis Assembly Removal (Fig. 22)

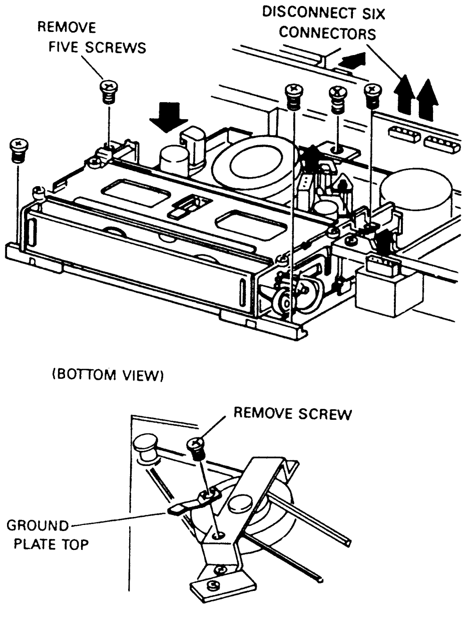

REMOVE
FIVE SCREWS
DISCONNECT SIX
CONNECTORS
(BOTTOM VIEW)
REMOVE SCREW
GROUND
PLATE TOP

Fig. 22 Mechanical Chassis Assembly Removal

1. Remove the Panels (See Figs. 1 to 3)
2. Remove the screw. (Bottom View)
3. Disconnect six connectors.
4. Remove five screws and pull the mecha chassis assembly upward to remove.

Video Head (Upper Drum) Removal and Drum Motor Assembly Removal. (Fig. 23)

Note: Take extreme care when removing the upper drum. Do not touch the video head tips (located in the upper drum) during servicing.

Follow the procedure for removing

1. Remove the top cabinet (See Fig. 1)
2. Remove the bottom cover (See Fig. 2)
3. Remove two (A) screws holding the cover upper drum.
4. Remove four wires soldered to PWB-Upper drum P-3.

Note: Upon reinstallation, connect four wire colors to wires of the same color which are soldered PWB-Upper drum P-3.

5. Remove two (B) screws on the upper drum.
6. Lift up the upper drum in the direction of the arrow.
7. Remove two (C) screws holding the drum motor.
8. Disconnect connector from the drum motor.
9. Remove three screws (D) holding the drum motor.

When it is necessary to remove lower drum, remove three screws (E) and lift up the lower drum assembly in the direction of the arrow.

Note: Upon reinstallation, alternately tighten two (2) upper drum holding screws and perform and following adjustments.
Tracking Preset Adjustment
A/C Head Horizontal Position Adjustment.

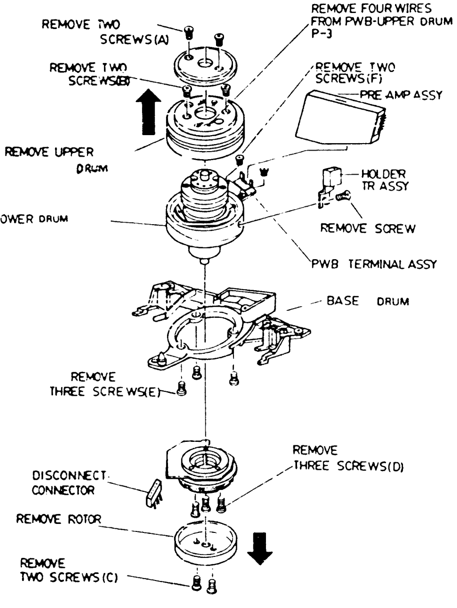

REMOVE TWO SCREWS(A)
REMOVE FOUR WIRES FROM PWB-UPPER DRUM P-3
REMOVE TWO SCREWS(B)
REMOVE TWO SCREWS(F)
PRE AMP ASSY
REMOVE UPPER DRUM
HOLDER TR ASSY
LOWER DRUM
REMOVE SCREW
PWB TERMINAL ASSY
BASE DRUM
REMOVE THREE SCREWS(E)
REMOVE THREE SCREWS(D)
DISCONNECT CONNECTOR
REMOVE ROTOR
REMOVE TWO SCREWS(C)

Fig. 23 Video Head Removal and Drum Motor Assembly Removal.

Full Erase (FE) Head/Supply Roller Removal (Fig. 24)

1. Remvoe the top cabinet (See Fig. 1)
2. Disconnect connector from the F/E Head.
3. Remove the nut at the top of the supply roller and remove the washer plain, supply roller, inner supply, flange upper, bush roller supply.
4. Remove the spring F/E head arm, washer plain.
5. Pull the arm F/E head upward to remove.

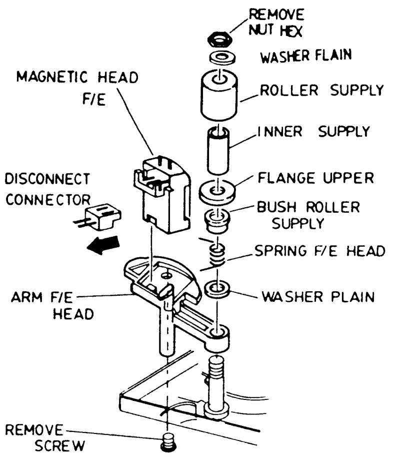

REMOVE NUT HEX
WASHER FLAIN
MAGNETIC HEAD F/E
ROLLER SUPPLY
INNER SUPPLY
DISCONNECT CONNECTOR
FLANGE UPPER
BUSH ROLLER SUPPLY
SPRING F/E HEAD
ARM F/E HEAD
WASHER PLAIN
REMOVE SCREW

Fig. 24 Full Erase (FE) Head/Supply Roller Removal

6. Remove the screw holding the F/E head at the back of the base.
After replacing or reinstalling the FE head, clean each tape contact surface of the F/E head and supply roller.

Note: Upon reinstallation, perform the supply roller height adjustment.

Audio/Control (A/C) Head Removal (Fig. 25)

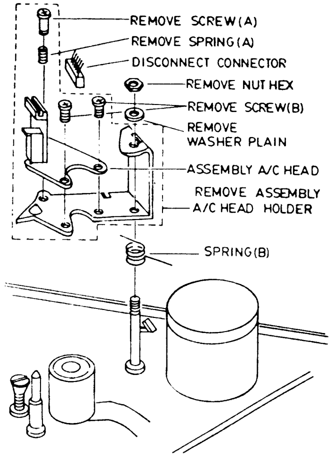

REMOVE SCREW(A)
REMOVE SPRING(A)
DISCONNECT CONNECTOR
REMOVE NUT HEX
REMOVE SCREW(B)
REMOVE WASHER PLAIN
ASSEMBLY A/C HEAD
REMOVE ASSEMBLY A/C HEAD HOLDER
SPRING(B)

Fig. 25 Audio/Control (A/C) Head Removal

1. Remove the top cabinet. (See Fig. 1)
2. Disconnect connector from the A/C head.
3. Remove the nut holding the A/C Head Holder and remove the washer plain.
4. Pull the A/C head assembly upward to remove.
5. Remove screw (A) and spring (A)
6. Remove screw (B) and remove assembly alchead.
7. After replacing or reinstalling the assembly A/C head holder, clean the tape contact surface of the head.

Note: Upon reinstallation, hook the spring between A/C head base and mecha chassis.
After installing the assembly A/C head and assembly A/C head holder, perform the following adjustment.
1) A/C Head Height, Tilt and Azimuth Adjustments.
2) A/C Head Horizontal Position Adjustment.
3) Audio Playback Gain Adjustment.
4) Audio Bias Level Adjustment.
- Audio head height must be performed before A/C head, horizontal position adjustment is performed.
- If audio head height is adjusted, the A/C head horizontal position must be readjusted.
- After completion, of the A/C head position adjustment, the A/C head base must be positioned at approximately the center of the mat adjust.

Loading Motor Assembly Removal (Fig. 26)

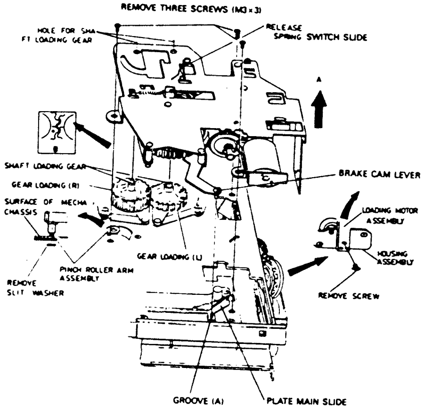

REMOVE THREE SCREWS (M3×3)
HOLE FOR SHAFT LOADING GEAR
RELEASE SPRING SWITCH SLIDE
A
SHAFT LOADING GEAR
GEAR LOADING (R)
SURFACE OF MECHA CHASSIS
BRAKE CAM LEVER
LOADING MOTOR ASSEMBLY
HOUSING ASSEMBLY
GEAR LOADING (L)
PINCH ROLLER ARM ASSEMBLY
REMOVE SLIT WASHER
REMOVE SCREW
GROOVE (A)
PLATE MAIN SLIDE

Fig. 26 Loading Motor Assembly Removal

1. Remove the top cabinet (See Fig. 1)
2. Remove the bottom cover (See Fig. 2)
3. Remove the mecha chassis assembly (See Fig. 22)
4. Remove the housing assembly (See Fig. 12)
5. Remove the slit washer
6. Release the spring S/W slide, and the gear loading spring
7. Remove the three screws and pull the loading motor assembly upward in the direction arrow mark (A)

Note: Upon reinstallation, be sure the marks on the gear loading (L), (R) are positioned in the line (See. B) and S/W slide position is at the end of left side.

Arm Tension Assembly, Tension Band Assembly and Holder Tension Spring Removal. (Fig. 27)

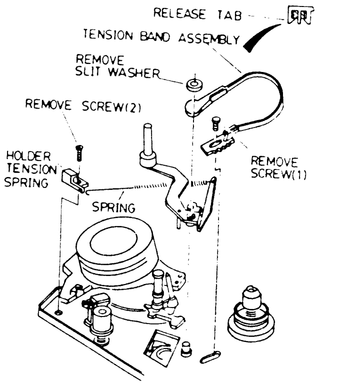

RELEASE TAB
TENSION BAND ASSEMBLY
REMOVE SLIT WASHER
REMOVE SCREW(2)
HOLDER TENSION SPRING
REMOVE SCREW(1)
SPRING

Fig. 27 Arm Tension Assembly, Tension Band Assembly and Holder Tension Spring Removal

1. Remove the screw (1) holding the tension band assembly
2. Release the spring hooked on the holder tension spring.
3. Remove the screw (2) and remove the holder tension spring.
4. Remove the slit washer and Pull the arm tension assembly upward.
5. Release the tab holding the tension band assembly.

Brake Sub (R) Assembly and Brake Sub (L) Assembly Removal. (Fig. 28)

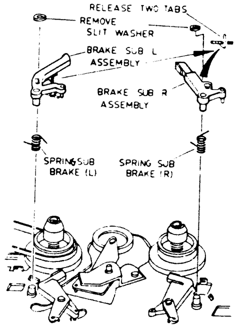

RELEASE TWO TABS
REMOVE SLIT WASHER
BRAKE SUB L ASSEMBLY
BRAKE SUB R ASSEMBLY
SPRING SUB BRAKE (L)
SPRING SUB BRAKE (R)

Fig. 28 Brake Sub (R) Assembly and Brake Sub (L) Assembly Removal

1. Follow the procedure for removing the Panels. (See Figs. 1 to 3)
2. Remove the housing assembly (See Fig. 12)
3. Remove the two slit washers and release the sub brake (R) spring.
4. Release the tabs holding the brake Sub (R) assembly and brake sub (L) assembly.

Note: Take care when removing spring.

Brake Main (L) Assembly and Brake Main (R) Assembly Removal (Fig. 29)

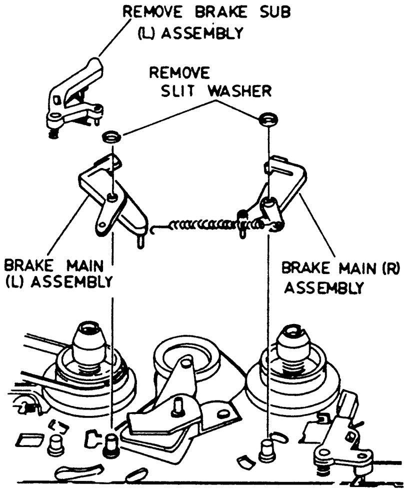

REMOVE BRAKE SUB (L) ASSEMBLY
REMOVE SLIT WASHER
BRAKE MAIN (L) ASSEMBLY
BRAKE MAIN (R) ASSEMBLY

Fig. 29 Brake Main (L) Assembly and Brake Main (R) Assembly Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Remove the housing assembly. (See Fig. 12)
3. Remove the brake sub (L) assembly. (See Fig. 28)
4. Remove the two slit washers.
5. Release the spring hooks on the brake Main assemblies.

Capstan Motor Removal (Fig. 30)

1. Remove the Panels. (See Fig. 1 to 3)
2. Remove the mecha chassis assembly (See Fig. 22)
3. *Disconnect two connectors.*
4. Release the capstan belt from the pulley capstan.
5. Remove three screws (A) holding the holder capstan motor.
6. Remove three screws (B) attached to capstan motor.

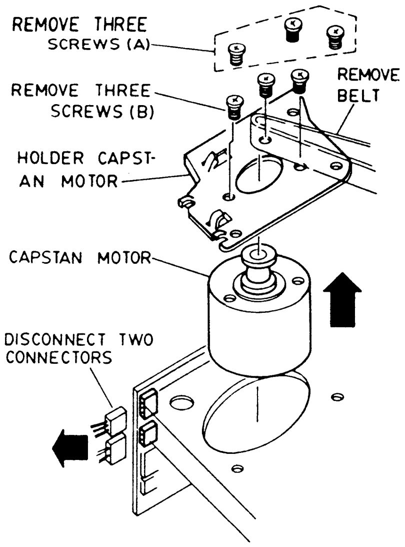

REMOVE THREE SCREWS (A)
REMOVE THREE SCREWS (B)
REMOVE BELT
HOLDER CAPST-AN MOTOR
CAPSTAN MOTOR
DISCONNECT TWO CONNECTORS

Fig. 30 Capstan Motor Removal

Assembly Gear Loading (L) (R) Removal (Fig. 31)

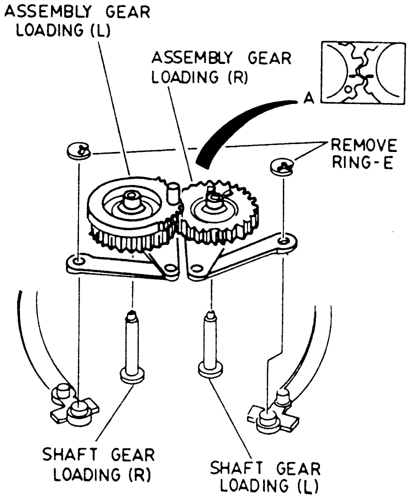

ASSEMBLY GEAR LOADING (L)
ASSEMBLY GEAR LOADING (R)
A
REMOVE RING-E
SHAFT GEAR LOADING (R)
SHAFT GEAR LOADING (L)

Fig. 31 Assembly Gear Loading (L) (R) Removal

1. Follow the procedure for removing the panels (See Figs. 1 to 3)
2. Remove mecha chassis assembly (See Fig. 22)

3. Remove the housing assembly (See Fig. 12)
4. Remove the loading motor assembly (See Fig. 26)
5. Remove th ring-E holding on the arm loading assembly.

Note: Fully unloaded position upon reinstallation, be sure the marks on the gear loading (L) (R) are positioned in the line (See. A)

Guide Roller Assembly Removal (Fig. 32)

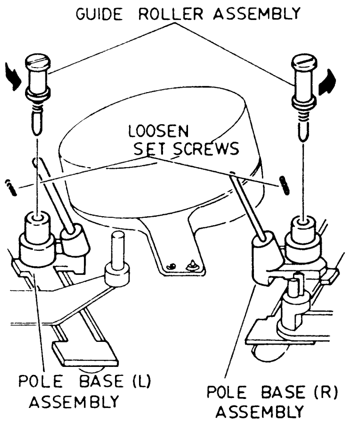

GUIDE ROLLER ASSEMBLY
LOOSEN SET SCREWS
POLE BASE (L) ASSEMBLY
POLE BASE (R) ASSEMBLY

Fig. 32 Guide Roller Assembly Removal

1. Remove the top and the bottom cover. (See Figs. 1, 2)
2. Loosen each set screw at the pole base assembly.
3. Turn the guide roller assemblies to the counter clock wise.
4. After replacing or reinstalling the guide roller assemblies, clean each tape contact surface of the guide roller assemblies.

Note: Upon reinstallation, perform the guide roller assemblies adjustment.

Reel Disk (S) Assembly Removal (Fig. 33)

1. Remove the top and bottom panels. (See Figs. 1, 2)
2. Remove the housing assembly (See Fig. 12)
3. Remove the screw holding the tension band assembly.
4. Remove the slit washer from the shaft reel disk.
5. Remove the washer plain (A)

Note: Pay particular attention to the washer plain (B) under the reel disk (S) assembly.

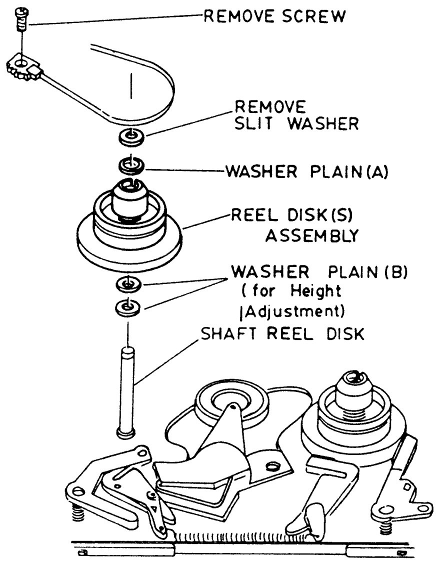

REMOVE SCREW
REMOVE SLIT WASHER
WASHER PLAIN (A)
REEL DISK (S) ASSEMBLY
WASHER PLAIN (B) (for Height |Adjustment)
SHAFT REEL DISK

Fig. 33 Reel Disk (S) Assembly Removal

Reel Disk (T) Assembly Removal. (Fig. 34)

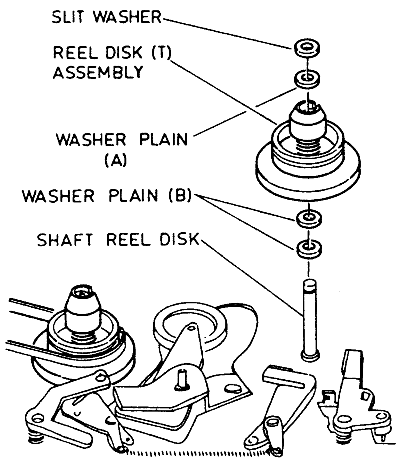

SLIT WASHER
REEL DISK (T) ASSEMBLY
WASHER PLAIN (A)
WASHER PLAIN (B)
SHAFT REEL DISK

Fig. 34 Reel Disk (T) Assembly Removal

1. Remove the top and bottom cover. (See Fig. 1, 2)
2. Remove the housing assembly. (See Fig. 12)
3. Remove the slit washer from the shaft reel disk.
4. Remove the washer plain (A) and pull the reel disk (T) assembly upward.

Note: Pay particular attention to the washer plain (B) under the reel disk (T) assembly.

Pinch Roller Assembly and Pinch Roller Arm Assembly Removal (Fig. 35)

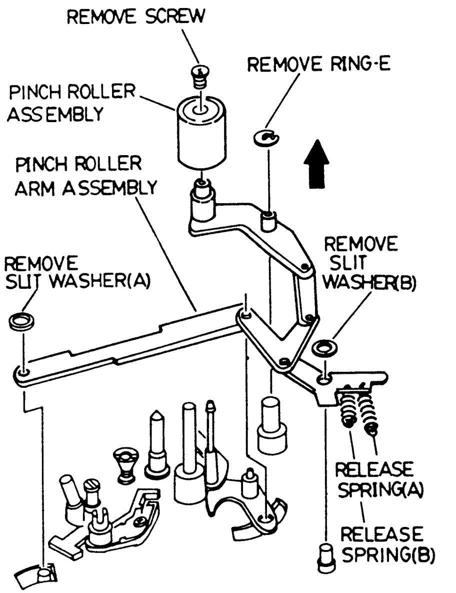

REMOVE SCREW
REMOVE RING-E
PINCH ROLLER ASSEMBLY
PINCH ROLLER ARM ASSEMBLY
REMOVE SLIT WASHER(B)
REMOVE SLIT WASHER(A)
RELEASE SPRING(A)
RELEASE SPRING(B)

Fig. 35 Pinch Roller Assembly and Pinch Roller Arm Assembly Removal

1. Follow the procedure for removing the panels (See Figs. 1 to 2)
2. Remove the housing assembly. (See Fig. 12)
3. Remove the screw holding the pinch roller assembly.
4. Remove the ring-E
5. Remove the slit washer (A) and slit washer (B)
6. Release the spring pinch roller.
7. Pull the pinch roller arm assembly upward (arrow mark direction) to remove.

Assembly Holder LED Removal (Fig. 36)

1. Follow the procedure for removing the panels. (See Fig. 1)
2. Remove the housing assembly. (See Fig. 12)
3. Disconnect connector.
4. Remove screw and pull the assembly holder LED upward to remove at the same time pushing the assembly A/C head toward arrow mark direction.

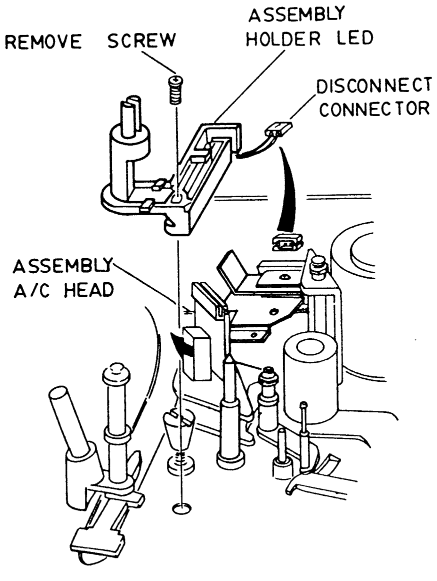

REMOVE SCREW
ASSEMBLY HOLDER LED
DISCONNECT CONNECTOR
ASSEMBLY A/C HEAD

Fig. 36 Assembly Holder LED Removal

Review Arm Assembly Removal (Fig. 37)

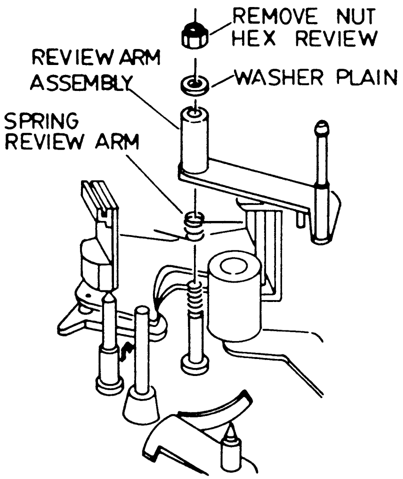

REMOVE NUT HEX REVIEW
REVIEW ARM ASSEMBLY
WASHER PLAIN
SPRING REVIEW ARM

Fig. 37 Review Arm Assembly Removal

1. Remove the top cabinet. (See Fig. 1)
2. Remove nut hex, collar review and washer plain.
3. Release spring review arm.
4. Pull the review arm assembly upward to remove.

Note: •After replacing or reinstalling the review arm assembly.
- Clean the tape contact surface of the review arm assembly.
- Upon reinstallation, perform the review arm assembly adjustment.

Drum Assembly Removal (Fig. 38)

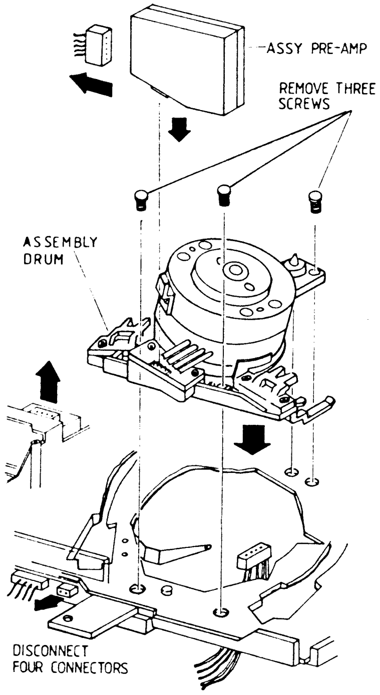

ASSY PRE-AMP
REMOVE THREE SCREWS
ASSEMBLY DRUM
DISCONNECT FOUR CONNECTORS

Fig. 38 Drum Assembly Removal

Note: Upon replacement of drum assembly bracket, all mechanical adjustment must be performed.

1. Follow the procedure for removing the panels. (See Fig 1 to 2)
2. Remove the pre-amp
3. Disconnect four connectors.
4. Remove three screws.

Capstan Flywheel Assembly Removal (Fig.39)

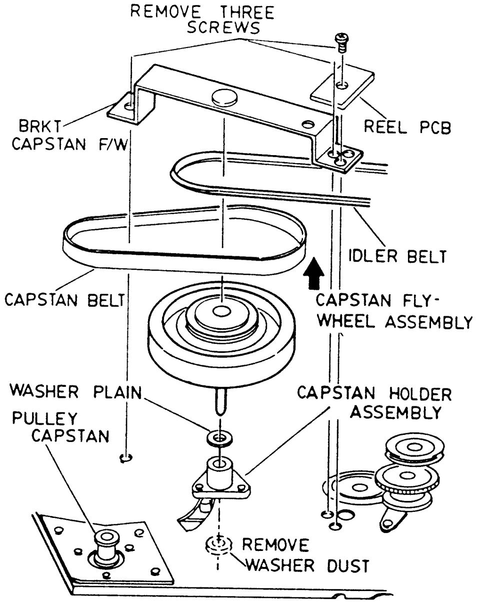

REMOVE THREE SCREWS
BRKT CAPSTAN F/W
REEL PCB
IDLER BELT
CAPSTAN BELT
CAPSTAN FLY-WHEEL ASSEMBLY
WASHER PLAIN
PULLEY CAPSTAN
CAPSTAN HOLDER ASSEMBLY
REMOVE WASHER DUST

Fig. 39 Capstan Flywheel Removal-Bottom View

1. Remove the top and bottom panels. (See Figs. 1,2)
2. Remove three screws.
3. Release idler belt and capstan belt.
4. Carefully remove the capstan flywheel assembly. A dust washer is located on the shaft below the mecha chassis.
5. After replacing or reinstalling the capstan flywheel, clean the capstan shaft.
6. Remove three screws to remove capstan holder assembly.

Assembly Photo Interrupter Removal. (Fig. 40)

1. Remove the top and bottom panels. (See Figs. 1,2)
2. Disconnect connector.
3. Remove screw.

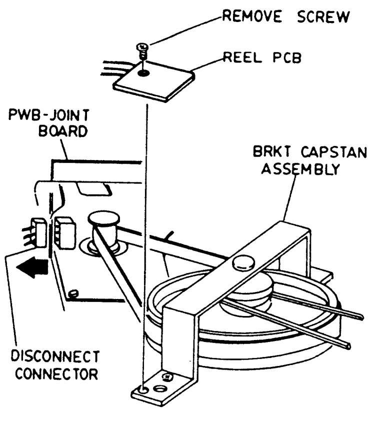

REMOVE SCREW
REEL PCB
PWB-JOINT BOARD
BRKT CAPSTAN ASSEMBLY
DISCONNECT CONNECTOR

Fig. 40 Assembly Photo Interrupter Removal

I.B Slide Assembly and Plate Main Slide Removal. (Fig. 41)

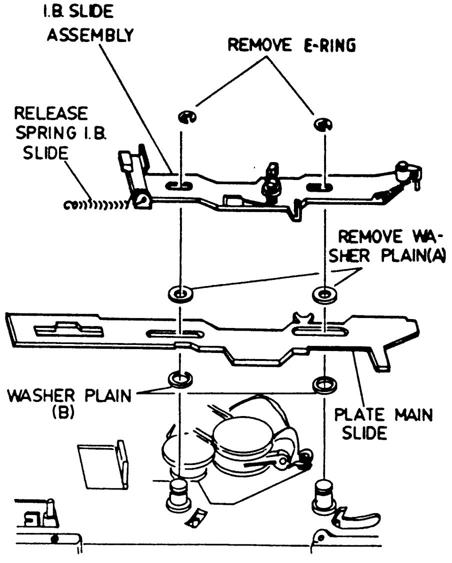

I.B SLIDE ASSEMBLY
REMOVE E-RING
RELEASE SPRING I.B SLIDE
REMOVE WASHER PLAIN(A)
WASHER PLAIN (B)
PLATE MAIN SLIDE

Fig. 41 I.B Slide Assembly and Plate Main Slide Removal

1. Follow the procedure for removing the panels. (See Figs. 1 to 3)
2. Remove mecha chassis assembly. (See Fig. 22)
3. Remove loading motor assembly. (See Fig. 26)
4. Remove the ring-E and release spring I.B slide.
5. Remove washer plain (A) and pull the plate main slide upward to remove.

Note: Pay particular attention to the washer plain (B) under the plate main slide.
•I.B: Idler/Break

Idler Clutch Assembly Removal. (Fig. 42)

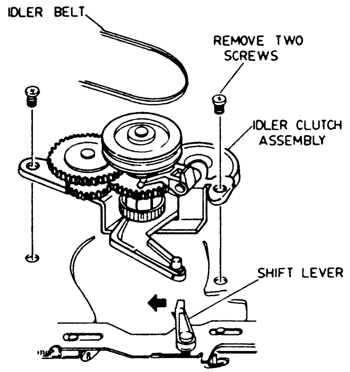

IDLER BELT
REMOVE TWO SCREWS
IDLER CLUTCH ASSEMBLY
SHIFT LEVER

Fig. 42 Idler Clutch Assembly Removal

1. Remove the bottom cover. (See Fig. 2)
2. Release the Idler belt and remove the two screws.
3. Pull the Idler clutch assembly upward to remove, at the same time push the shift lever about 5-10 mm.

Remote Control Hand Unit Disassembly (Fig. 43)

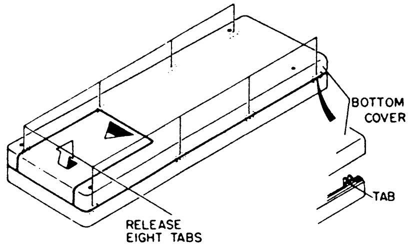

BOTTOM COVER
TAB
RELEASE EIGHT TABS

Fig. 43 Remote Control Hand Unit Cover Removal

Remote Control Hand Unit Cover Removal (Fig. 43)

1. Release eight (8) tabs holding the bottom cover.

How To Assemble Cassette Housing

•When jig for assembling is not used.

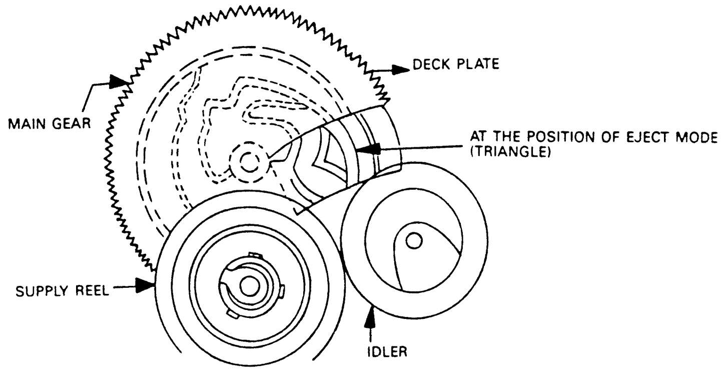

DECK PLATE
MAIN GEAR
AT THE POSITION OF EJECT MODE (TRIANGLE)
SUPPLY REEL
IDLER

Fig. 48

1. Before assembling the cassette housing, eject loading gear completely.
2. Make certain the main gear of the loading motor is at the eject position as fig 48.
3. As shown fig 49, rotate the side bevel gear of cassette housing in the direction of the arrow mark which is seperate from deck until the rotation comes to stop.

Check the movement of the front loading mechanism, it should move freely from the eject to the cassette load position. If not the bevel gear is in the wrong position.

Note: ______

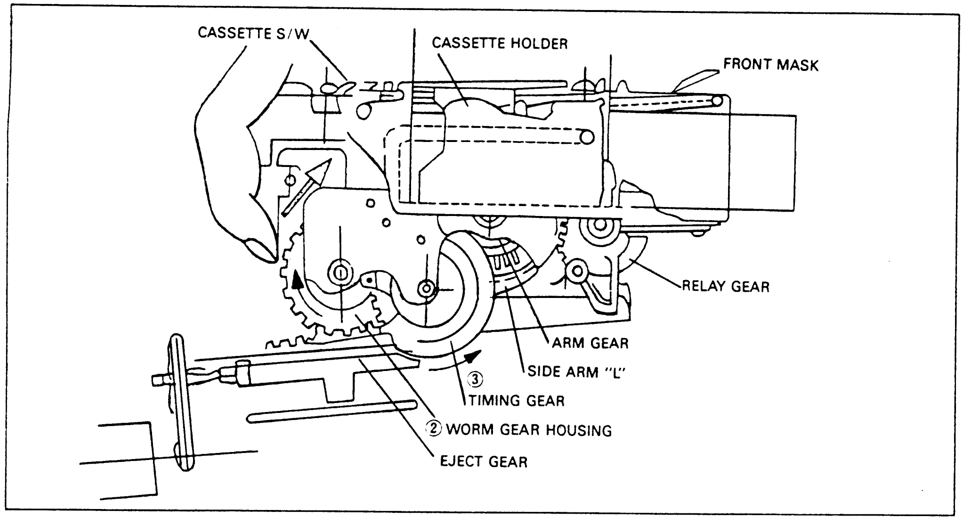

CASSETTE S/W
CASSETTE HOLDER
FRONT MASK
RELAY GEAR
ARM GEAR
③
SIDE ARM "L"
TIMING GEAR
② WORM GEAR HOUSING
EJECT GEAR

Fig. 49

After repair, if the cassette tape does not come out in the eject mode, assembling of②and③is not correct, reassemble the cassette housing.

When jig for assemble is used.

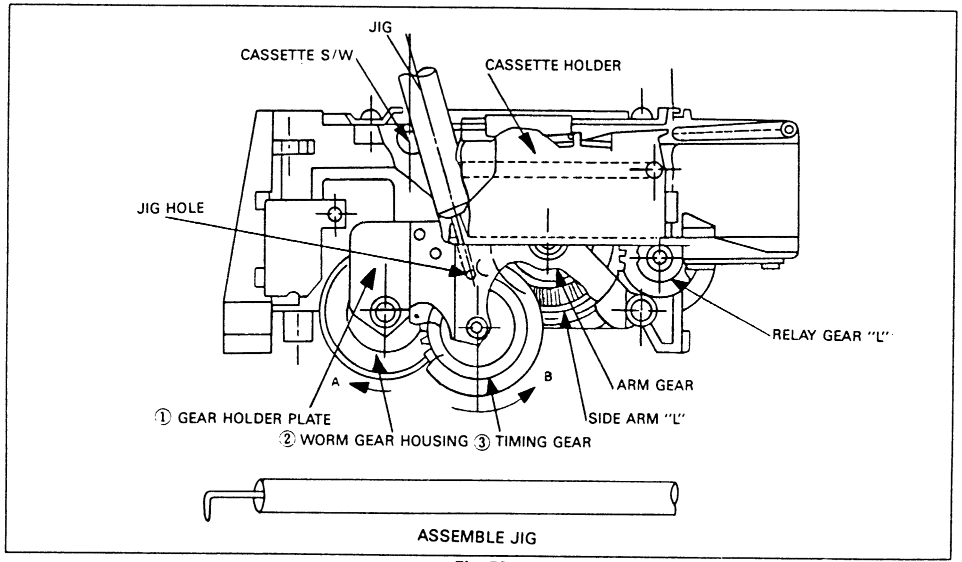
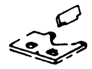
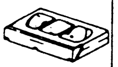
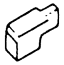
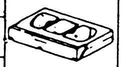
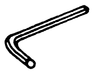
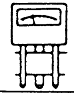

JIG
CASSETTE S/W
CASSETTE HOLDER
JIG HOLE
RELAY GEAR "L"
A
B
ARM GEAR
① GEAR HOLDER PLATE
SIDE ARM "L"
② WORM GEAR HOUSING ③ TIMING GEAR
ASSEMBLE JIG

Fig.50

As shown in Fig. 50, rotate the timing gear 3 and worm gear housing 2 to the direction of A and B, Aligned the hole of gear holder plate①and timing gear③and then insert the assembley jig in the hole to set-up the deck.

3. MECHANICAL ADJUSTMENTS

MECHANICAL ADJUSTMENT TOOLS

No	Jig Item.		Code No.	Configuration	Description	Manufacture
1	Head Gauge		SSJ-1001		This jig is used to check and adjust the torque of Takeup/Supply Reel.	SAMSUNG
2	Master Plane and Reel Disk Height		SSJ-1002		This jig is used to check the height difference between Reel Disk and Deck Plate	SAMSUNG
3	Back Tension Measuring Cassette Tape		SSJ-1004		This tape is used for supply reel torque alignment.	SAMSUNG
4	Guide Pole Height Adjusting Jig.		SSJ-1005		Used to adjust tape height to the video head.	SAMSUNG
5	Drum Replacement Jig.		SSJ-1007		This jig is used when replacing the VCR's upper drum.	SAMSUNG
6	Alignment Tape	(SR1-2)	SSJ-1014C		This tape is used for fine electrical adjustment and tape running system (MECHA) alignment.	SAMSUNG
		(SR2-2)	SSJ-1014D			
		(SR2-3)	SSJ-1014E			
7	Tension Gauge (5.0kg)		SSJ-1008		The gauges are used for tension measurements.	JAPAN
8	Torque Gauge		SSJ-1009		This jig is used to check and adjust the torque of Takeup/Supply Reel.	JAPAN
9	Hex Wrench (0.9mm)		SSJ-1010A		These wrenches are used for locking or tightening special Hexagon type screws	GENERAL
	Hex Wrench (1.2mm)		SSJ-1010B			
	Hex Wrench (1.5mm)		SSJ-1010C			
10	Tape Tension Gauge (Tentelo Meter)		SSJ-1011		This tape tension gauge is used for measuring the back tension of the running tape.	U S A
11	Cassette Housing Assemble Jig.		SSJ-1012		This Jig used for cassette housing assembly	SAMSUNG

Reel Disk Heights (Fig. 1)

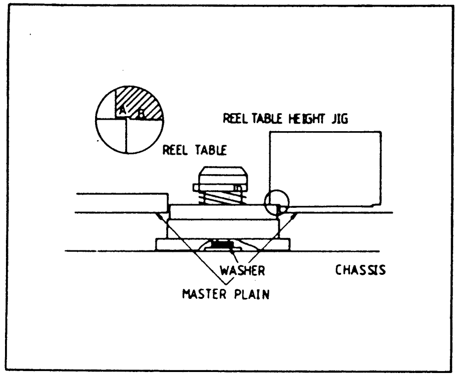


Fig. 1 Reel Disk Height

The height of the supply and take-up turntables should be the same, ±0.2 mm. Turntable heights are adjusted by changing washer plain stack located under each turntable.

Check turntable heights by installing the Master Plain. Set the Reel Disk Height Jig in place and check the height of the supply and take up turntables. (See Fig. 1.)

The size of washer is 0.13 mm (3.2 mm ID). This washer should be used to achieve egual reference heights for both turntables.

Note: For proper height point "A" should slide over the reel disk and point "B" should not. (Fig. 1)

Back Tension Adjustment (Fig. 2)

When the back tension is properly adjusted, the service test tape recorded under laboratory conditions) will play back with minimum skew error—picture displacement in line following head switching. The tension is set as follows:

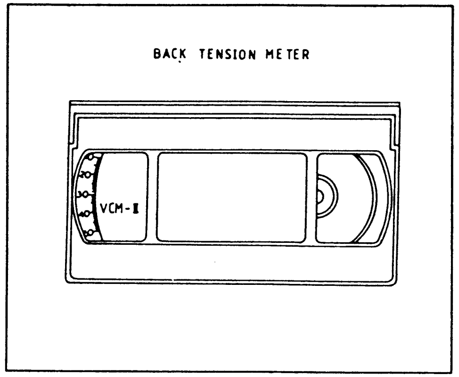


Fig. 2 Bach Tension Meter

1. Load the instrument with the back tension adjustment tape.
2. Place the instrument in the "play" mode.
3. Read the scale on the reel disk (S).
4. This reading should be between 39.5 and 44.5
5. After loosening the screw, move the holder tension spring direction "b" when the tension adjustment tape reads 45 or higher, and to the holder tension spring in direction "a" when it is 39 or lower, and adjust the back tension for a nominal reading of 42 on the scale.
6. Recheck the arm tension position when the back tension is changed greatly (6 or more).

Note: The instrument must be in a horizontal position for this adjustment.

Arm Tension Position Adjustment (Fig. 3)

1. After removing the housing assembly, the tenth mode of the Deck Joint P.C. Board's wafer CN 205 connect to ground. (Refer to page 3-7).
2. Place the instrument in the "play" mode.
3. After loading is complete, loosen the screw holding the holder tension A and adjust so tht the clearance between the center of roller supply and the pole tension is 1.6 mm ~ $^{+1.0}_{-0.5}$ mm.
4. Tighten screw to secure adjustment.

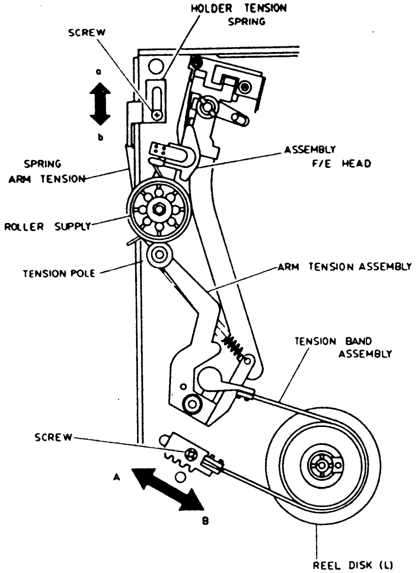


Fig. 3 Arm Tension/Back Tension

Brake Torque Confirmation (Fig. 4)

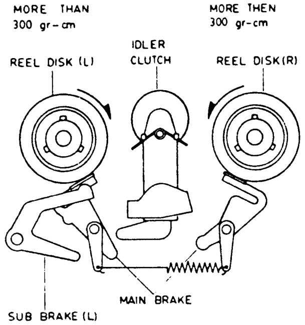


Fig. 4 Main Brake Torque

1. Remove top cover and place instrument in the "stop" mode.
2. Clean the brake surfaces on turntables using "Kim-wipes" and solvent before measuring torque.
3. Attach the torque gauge head to the torque gauge.
4. Place torque gauge on the reel disk (S) turntable.
5. Turn torque gauge in a clockwise direction until the brake begins slipping. Maintain "slipping" rotation and read torque—torque reading should be more than 300 grams—cm.
6. Repeat for the take up side turning the torque gauge counterclockwise—reading should be more than 300 grams-cm.

Note: Brake torque problems can cause tape stretch, broken tape or loose tape wind in cassette.
These symptoms can usually be corrected by properly cleaning. If not replace brakes.

Play, Fast Forward, Rewind Torque Confirmation

1. Place the cassette holder in the loading state without inserting a cassette tape.
2. Attach the torque gauge head to the torque gauge.
3. Place torque gauge on the reel disk (T), operate instrument in the "SP Record" mode—torque should measure 150-30 grams-cm.
4. Press Fast Forward button—torque reading should be 600 grams-cm minimum.
5. Place torque gauge on the reel disk (S) and operate instrument in the "rewind" mode—torque reading should be 600 grams-cm minimum.

Rough Tape Travel Check

Using a blank tape, place the instrument in "play" and note the following.

1. The tape should be in full contact with all tape guide posts.
2. The tape should be crease-free with all tape guide posts.
3. The supply roller should be moving freely.
4. The tape should be perpendicular to the longitudinal axis of the heads when crossing the erase head and the A/C head.
5. The tape should be centered top to bottom on the head when crossing the full erase head.
6. The tape should follow the lower-edge guide surface on the D-D drum.

Creasing or Slack Tape (Fig. 5)

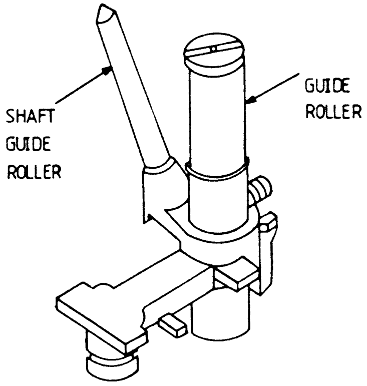


Fig. 5 Creasing or Slack Tape

Load instrument with a blank tape and place in "play" mode. With the tape running, inspect the tape path for creasing or frilling along top or bottom edges of tape. If the tape is creasing or frilling, check the tape as it goes "on" and comes "off" the lower drum.

The tape should follow the lower edge guide surface on the drum. If the tape is high on the guide surface, rough adjust guide rollers to correct this condition (use guide roller adjusting driver)

It will now be necessary to perform guide rollers adjustments and confirm interchangeability.

Mechanical Interchangeability Considerations

The tape-guide adjustments position the tape so that the prerecorded tracks on the test tape align perfectly with the scan of the video head assembly. The mechanical interchangeability adjustment procedures will insure that a tape recorded on one VHS recorder will play back properly on another mechine.

Usually little or no mechanical adjustment is required after routine (head replacement) servicing. Before making any adjustments, perform the following interchangeability confirmation procedure to determine if adjustment is required. If the video heads are replaced, it will also be necessary to confirm the PG shifter adjustment.

If major mechanical servicing was performed (tape guide replacement, etc.) perform "Rough Tape Travel Adjustment" before using test tape.

Interchangeability Confirmation (Fig. 6)

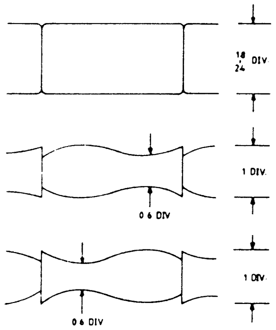


Fig. 6 Interchangeability Confirmation

This confirmation check should be performed after any servicing operation that could adversely affect the tape bath; i.e. D-D drum motor replacement, tape guide replacement, audio/control head replacement, etc.

If unit passes this confirmation check, no tape guide adjustment is required.

Preliminary: This adjustment should be performed after the Tracking Preset adjustment is completed.

1. Connect a channel-1 scope probe (2V/div.; 5ms/div.) to TP201 (MAIN A PCB.) Trigger the scope on channel-1.
2. Connect the channel-2 scope probe (20mV/div.)to TP303 (MAIN B PCB; PB FM LEVEL).
3. Play monoscope signal on test tape (Alignment Tape SR1-2, See Jig List).
4. Adjust tracking control (VR701) for maximum FM envelope amplitude (TP 0303 signal) at center of envelope.
5. Adjust scope vertical gain control so that maximum envelope amplitude is 1.8—2.4 graticule divisions.
6. Turn tracking control (VR701) to the left so that maximum envelope amplitude is graticule divisions.
7. Confirm that the minimum envelope amplitude is 0.6 graticule divisions or more at this time.
8. Turn tracking control (VR701) to the right so that maximum envelope amplitude is 1 graticule divisions.
9. Confirm that the minimum envelope amplitude is 0.6 graticule divisions or more at this time.
10. When the confirmation items described above are satisfied, the tape guide adjustment is not necessary. When they are not satisfied, adjust the tape guide.
11. Set tracking control to detent (fixed) position. They adjust Control Track/Audio Head assembly position (X-value) to obtain maximum FM envelope (TP 0303 signal) at the detent position.

Note: If the D-D drum motor assembly has been replaced, perform the following electrical adjustments.
- PG Shifter adjustment
- Record Chroma and Luminance Level adjustments

Guide Rollers Adjustments (Fig. 7)

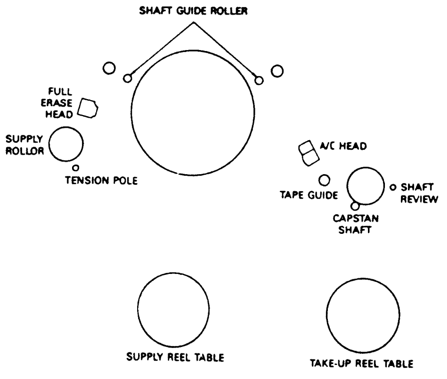


Fig. 7 Tape Guides

1. Connect channel-1 scope probe (2V/div.; 5ms/div.) to TP201. Trigger the scope on channel-1.
2. Connect channel-2 scope probe (10mV/div.) to TP 0303 (Main B PCB; PB FM LEVEL).
3. Set tracking control to detent (fixed) position and play back test tape monoscope signal. (Alignment tape SR1-2. Ref. Jig List). Loosen set screw on pole base of guide rollers.
4. Adjust guide roller down using guide roller adjusting driver (CW) until bottom edge of tape slightly bows the bottom of tape guide.
5. Monitor the head FM envelope at TP 0303
6. Raise (CCW) guide roller (right guide) to obtain maximum amplitude at right side of head envelope.
7. Raise (CCW) guide roller (lift guide) to obtain maximum amplitude at left side of Head envelope.
8. Adjust tracking control (VR701) for best envelope.
9. Touch up guide rollers for maximum amplitude flat envelope. Tighten set screw at pole base of guide rollers.
10. Adjust control head position (if necessary) to move the best envelope condition to the tracking control detent position.

Note: In the event that correct head envelope is not obtainable, check Audio/Control (A/C) head adjustments.

Audio/Control Head (Height/Tilt/Azimuth) (Fig. 8)

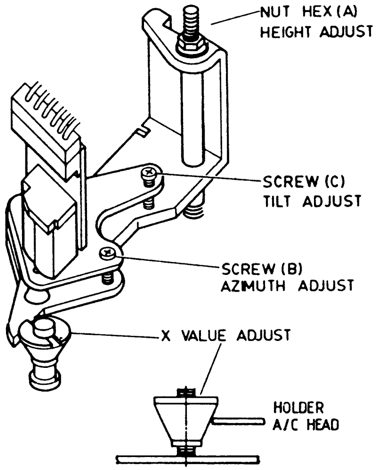


Fig. 8 Audio/Control Head Assembly

1. Connect a scope probe (0.5V/div.; 1ms/div.) to TP0502 (Use audio out jack) located on the main circuit board.
2. Play back a 1-KHz (color bars) audio signal on test tape (Alignment Tape SR 2-2. See Jig List)
3. Alternately adjust height nut (A) and tilt screw (C) for maximum output.
4. Play back a 6-KHz audio signal on test tape. (Alignment Tape SR 1-2. See Jig List)
5. Adjust azimuth screw (B) for maximum output.
6. Repeat steps 3 and 5 for maximum 6-KHz and 1-KHz output.
7. Lock the A/C Head (A) with paint.

Audio/Control Head (AC Head Horizontal Position) (Fig. 8)

This adjustment establishes proper tape tracking when the tracking control (VR701) is in its detent position.

Note: This adjument should only be made after the tracking adjustment is completed. (See Electrical Adjustments.)

1. Connect a scope probe (10mV/div.; 5ms/div.) to TP 0303 (MAIN B PCB; PB FM LEVEL).
2. Set tracking control (VR701) to the detent (fixed) position.
3. Play back monoscope signal on test tape. (Alignment tape SR 1-2. See Jig List)
4. Carefully move the A/C head base plate in either direction for maximum head envelope output by adjusting the X-value screw.

Operating The VCR without Inserting a Cassette Tape (Fig. 9)

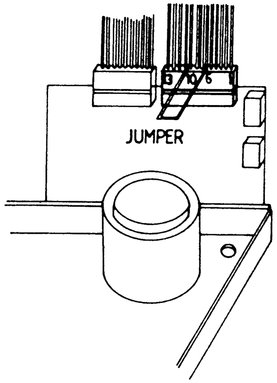


Fig. 9

1. Remove the top cover.
2. Remove the housing assembly.
3. Plug the power cord of the VCR into the AC outlet.
4. Turn "on" the power switch of the VCR.
5. Connect a jumper between pins 6 and 10 of connector.
6. The above procedure enables the VCR to operate without loading a cassette tape.

Note: Operate the play or record button in order to place the VCR in the record mode or in the play mode.

4. ELECTRICAL ADJUSTMENTS

Circuit Board Location and Identification (Fig. 1, 2)

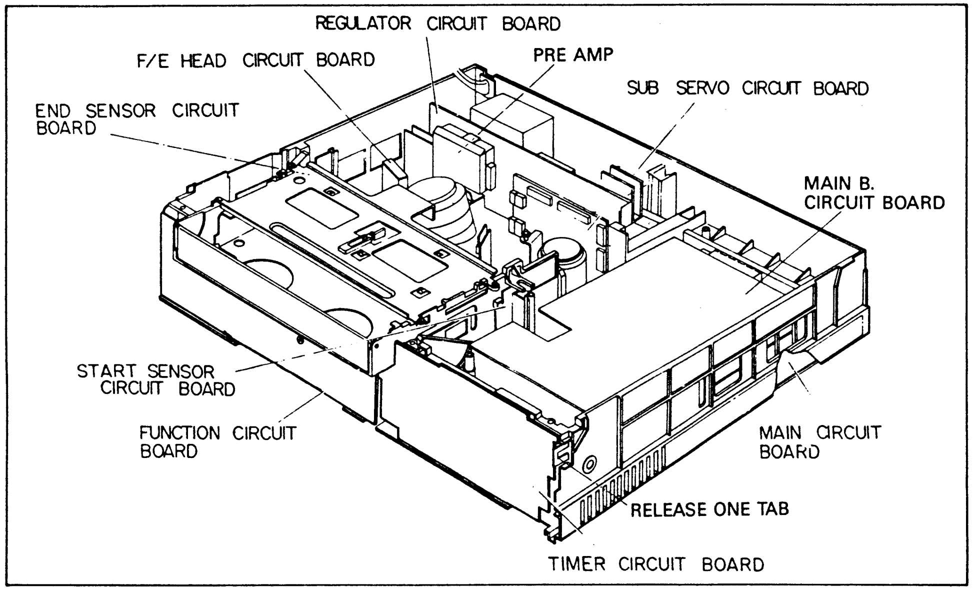

REGULATOR CIRCUIT BOARD
F/E HEAD CIRCUIT BOARD
PRE AMP
SUB SERVO CIRCUIT BOARD
END SENSOR CIRCUIT BOARD
MAIN B. CIRCUIT BOARD
START SENSOR CIRCUIT BOARD
FUNCTION CIRCUIT BOARD
MAIN CIRCUIT BOARD
RELEASE ONE TAB
TIMER CIRCUIT BOARD

Fig. 1 Top View

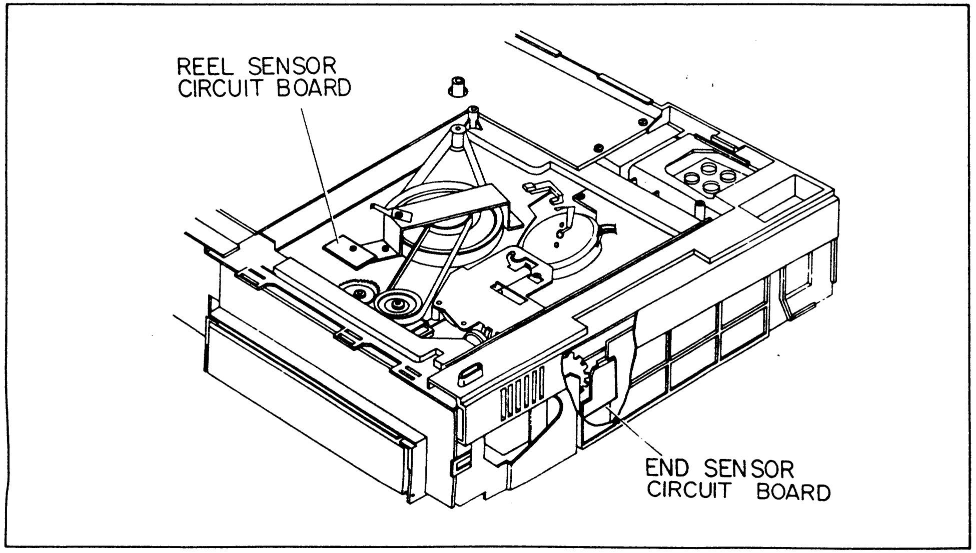

REEL SENSOR CIRCUIT BOARD
END SENSOR CIRCUIT BOARD

Fig. 2 Bottom View

•SERVO SECTION in Main. A PCB

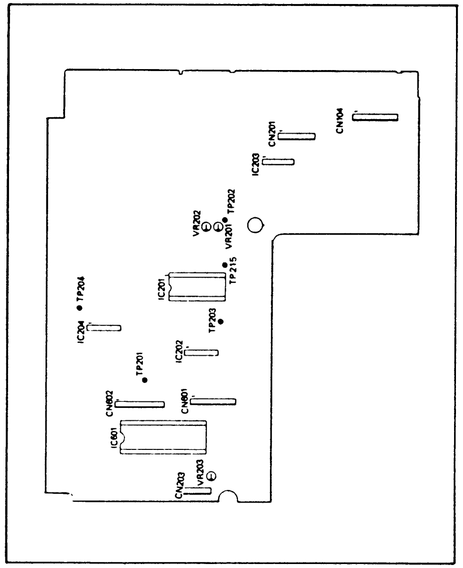
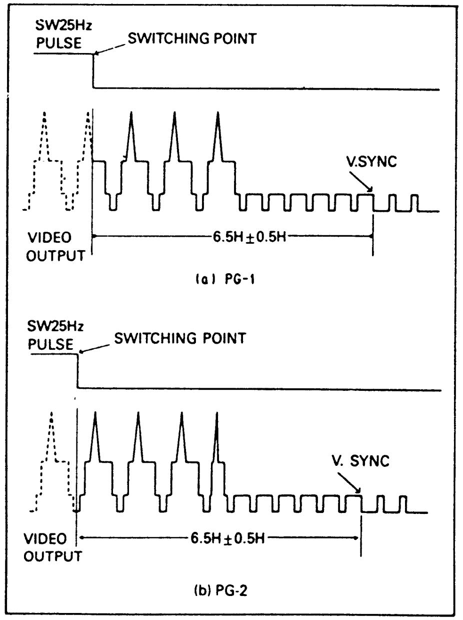

CN104
CN201
IC203
VR202
VR201
TP202
TP215
IC201
TP203
IC202
TP201
IC204
TP204
CN602
CN601
IC601
CN203
VR203

Fig. 3 SERVO SECTION in Main A PCB-Component Side

•PG (Pulse Generator) Shifter Adjustment


SW25Hz PULSE
SWITCHING POINT
V.SYNC
VIDEO OUTPUT
6.5H±0.5H
SW25Hz PULSE
SWITCHING POINT
V. SYNC
VIDEO OUTPUT
6.5H±0.5H

(a) PG-1

(b) PG-2

Fig. 4 PG Shifter

Equipment:	Oscilloscope	
Test points:	TP201 (SW 25Hz)	Main. A
	TP0301 (Video Output Signal)	Main. B
Adjust:	VR201 (PG-1)	Main. A
	VR202 (PG-2)	Main. A

The Pulse Generator (PG) Shifter determines the video head switching point during playback. Misadjustment of the PG Shifter may cause head switching noise in the picture and/or vertical jitter.

1) Load the instrument with an alignment tape and playback the color bar signal or monoscope signal. (Alignment Tape SR2-2).
2) Connect a channel-1 scope probe (1V/div.; 50μs/div.) to TP201. Trigger the scope on channel-1.
3) Connect the channel-2 scope probe (1V/div.) to TP0301.
4) Set the scope to (+) slope and adjust the PG-1 shifter control (VR201) so that the trailing edge of the SW 25Hz pulse is placed 6.5H±0.5H (horizontal) lines before the start of vertical sync pulse.
5) And then, set the scope to (−) slope and adjust the PG-2 Shifter control (VR202) as in the PG-1. (Fig. 4)

•Tracking Preset Adjustment

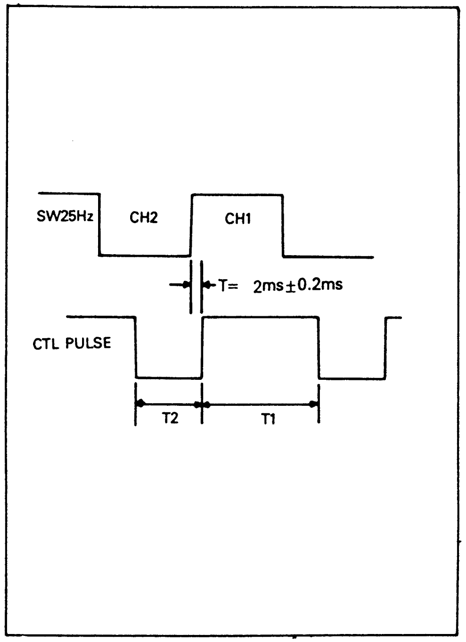

SW25Hz
CH2
CH1
T= 2ms±0.2ms
CTL PULSE
T2
T1

Fig. 5 Tracking Preset

Equipment:	Oscillscope	
Test Points:	TP201 (SW 25Hz)	Main. A
	TP215 (CTL Pulse)	Main, A
Adjust:	VR203 (Tracking Preset)	Main. A

This adjustment sets the optimum tracking during playback of a tape recorded on this instrument so that it occurs at the detented position of the Tracking control (VR701).

1) Load the instrument with an alignment tape and playback the color bar signal. (Alignment Tape SR1-2).
2) Connect a channel-1 scope probe (2V/div.; 5ms/div.) to TP201. Trigger the scope on channel-1.
3) Connect the channel-2 scope probe (2V/div.) to TP215.
4) Set the Tracking Control (VR701) on the front panel to the detented position and adjust the Tracking Preset Control (VR203) to align the pulse width T=2.0ms+0.2ms. (Fig. 5)

Note: Make sure that T1 > T2. If not, change the order of the CTL head wire for the correct SERVO adjustment.

•Vertical Lock Pulse Adjustment

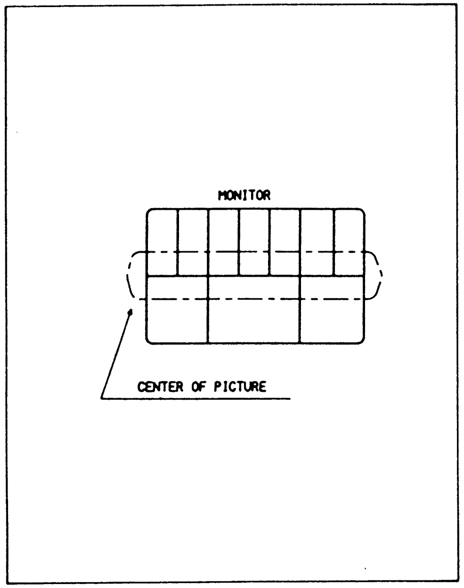


Fig. 6 Vertical Lock Pulse

Equipment:	TV monitor	
Adjust:	VR702	Timer

This adjustment is to prevent vertically unstable picture in Pause mode.

1) Apply a PAL color bar signal to the Video Input jack (BNC) on the rear panel.
2) Rocate the input selected S/W to AUX.
3) Insert a biank tape and make a recording for a few minutes.
4) Playback in PAUSE/STILL mode.
5) Adjust the V-Lock Control VR702 so that the center of picture is most stable. (Fig. 6).

•AUDIO SECTION in Main. B PCB

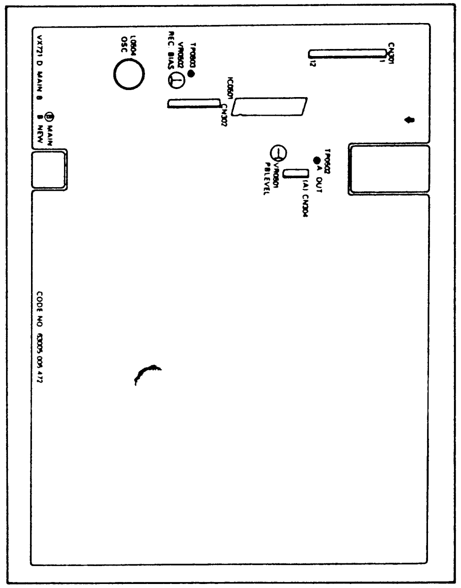


Fig. 7 AUDIO SECTION in Main PCB-Component Side

•Audio PB Level Adjustment

Equipment:	AC Voltmeter	
Test Points:	TP0502 (Audio Output)	Main. B
Adjust:	VR0501 (Audio PB Level Control)	Main. B

This adjustment sets the output level of the audio signal to the specified level.

1) Connect a AC Voltmeter (0dB=1 Vrms) to TP0502.
2) Load the instrument with an alignment tape and playback the 1KHz audio signal. (Alignment Tape SR2-2).
3) Adjust the Audio Playback Level Control (VR0501) for 500mVrms.

•Audio Bias Level Adjustment

Equipment:	Oscilloscope	
Test Points:	TP0503 (Rec Bias Level)	Main. B
Adjust:	VR0502 (Audio Bias Level Control)	Main. B

This adjustment optimizes the audio record bias. When the audio record bias is too low, high frequencies are increased resulting in distortion. When the level is too high, high frequencies are attenuated.

1) Connect a channel-1 scope probe (10V/div.; 10us/div.) to TP0503.
2) Load the instrument with a blank tape and place in the SP record mode with no signal.
3) Adjust the Audio Bias Level Control (VR0502) for 40 Vp-p±1Vp-p.

•LUMI/CHROMA SECTION in Main B.

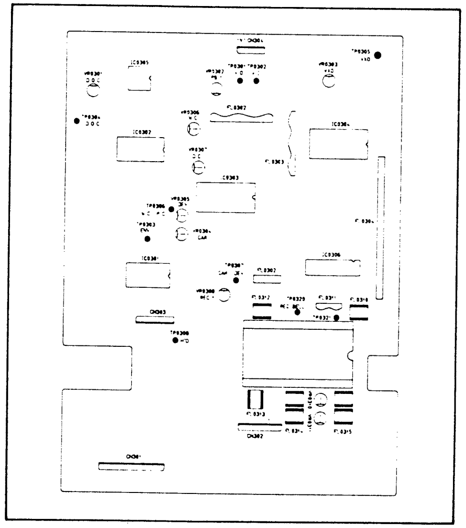


Fig. 8 LUMI CHROMA SECTION in Main. B Component Side

•PB Luminance Level Adjustment

Equipment:	Oscilloscope	
Test Point:	TP0301 (Video Output Level)	Main. B
Adjust:	VR0302 (PB Luminance Level Control)	Main. B

This adjustment sets the output level of the video signal to the specified level.

1) Connect a channel-1 scope probe (0.5V.; 10μs/div.) to TP0301.
2) Load the instrument with an alignment tape and playback the color bar signal. (Alignment Tape SR2-2).
3) Adjust the PB Luminance Level Control (VR0302) for 2Vp-p.

•CCD IN (Clamp) Adjustment

Equipment:	Oscilloscope	
Test Point:	TP0304 (CCD Video Level)	Main. B
Adjust:	VR0301 (CCD Level Control)	Main. B

This adjustment is for the compensation of the Drop Out. When there is the Drop Out, if the CCD output level is very low, the Black Trigger occurs.
If the level is very high, the White Trigger occurs.

1) Connect a channel-1 scope probe (0.1V/div.) to TP0304.
2) Load the instrument with an alignment tape and playback the color bar signal. (Alignment Tape SR2-2).
3) Adjust the CCD IN Control (VR0301) for 0.6Vp-p.

•Sub Carrier Frequency (4.43 MHz) Adjustment

Equipment:	Frequency Counter	
Test Point:	TP0305 (VXO OUT)	Main. B
Adjust:	VR0303 (Sub Carrier Frequency)	Main. B

This adjustment sets the 4.43MHz VXO oscillation frequency accurately.
When this adjustment is incomplete, 1H delay of the video signal is disabled and the S/N deteriorates.

1) Connect a frequency counter to TP0305.
2) Load the instrument with an alignment tape (Alignment Tape SR2-2) and play it back.
3) Adjust the Sub Carrier Frequency Control (VR0303) so that the frequency reads 4.433619MHz±10Hz.

•White & Dark Clip Adjustment

Equipment:	PAL TV TEST SIGNAL GENERATOR Oscilloscope	
Test Point:	TP0306 (Video White/Dark Clip Level)	Main. B
Adjust:	VR0306 (White Clip)	Main. B
	VR0307 (Dark Clip)	Main. B

This adjustment is used to prevent Overmodulation. If the adjustment is over the accurate point, the White/Dark Clip occurs in playback and the S/N ratio decreases for the AM elements intermixed.

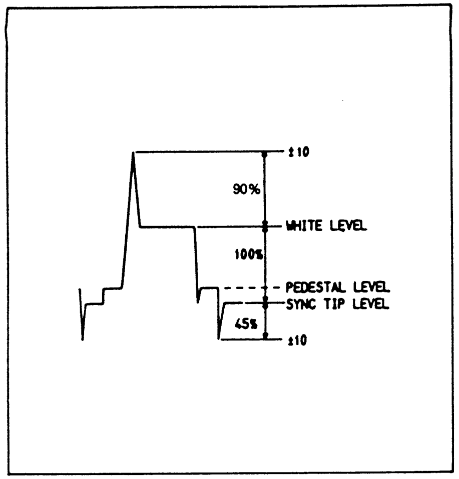


Fig. 9 White and Dark Clip Adjustment

1) Apply a PAL color bar signal to the video input jack on the rear panel.
2) Connect a channel-1 scope probe (0.2V/div.; 20us/div.) to TP0306.
3) Insert a blank tape and make a recording.
4) Adjust the White Clip Control (VR0306) and Dark Clip Control (VR0307) so that the overshoot and undershoot are as shown in Fig. 9.

•FM Carrier & Deviation Adjustment

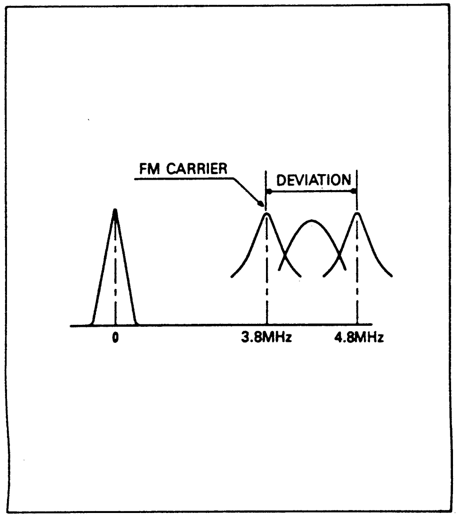


Fig. 10 FM Carrier & Deviation Adjustment

Equipment: Tracking Scope
Test Point: TP0307 (FM Output) Main. B
Adjust: VR0304 (FM Carrier) Main. B
VR0305 (Deviation) Main. B

This adjustment sets the frequencies of the FM Carrier and Deviation.
If the Deviation is less than 1MHz, the Video output level is low. When the Deviation is more than 1MHz, the output level is high and there is the Overmodulation, So the screen has the White/Dark Trigger and the S/N ratio is not good.

1) Apply a 100% White signal to the video input jack on the rear panel.
2) Rocate the input selected S/W to AUX.
3) Connect a Tracking Scope to TP0307.
4) Insert a blank tape and make a recording.
5) Adjust the FM Carrier Control (VR0304) so that the frequency is 3.8MHz±0.1MHz.
6) And then adjust the Deviation Control (VR0305) so that the frequency is 4.8MHz±0.1MHz for the 1MHz deviation. (See Fig. 10).

•REC FM Current Level Adjustment

Equipment: Oscilloscope
Test Point: TP0310 PRE AMP
Adjustment: VR0308 Main. B

1) Apply a PAL color bar signal to the video input jack to the rear panel.
2) Rocate the input selected S/W to AUX.
3) Connect a channel-1 scope probe (1V/div. 20ms/Div) to TP0310.
4) Insert a blank tape and make a recording.
5) Adjust the FM current control VR0308 so that the current is 5Vp-p.

•PB ANTI BELL Adjustment

Equipment: Oscilloscope
Test Point: TP0301 Main. B
Adjustment: FL0312 Main. B

1) Load the instrument with an alignment tape and playback the color bar signal (Alignment tape SR2-3)
2) Connect a channel-1 scope probe to TP0301 (0.5V/div, 10usec/div)
3) Adjust FL0312 so that magenta color level of color bar signal do not make a "Doubling Picture".

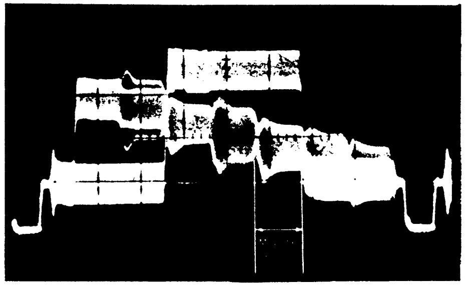


Fig 11. PB ANTI BELL Adjustment

•PB BELL Adjustment

Equipment: Oscilloscope
Test Point: TP0321 Main. B
Adjustment: FL0313 Main. B

1) Load the instrument with an alignment tape and playback the color bar signal (Alignment tape SR2-3)
2) Connect a channel-1 scope probe to TP0321 (0.5V/div, 10usec/div)
3) Adjust the FL0313 so that the noise level of waveform is minimum see below figure.

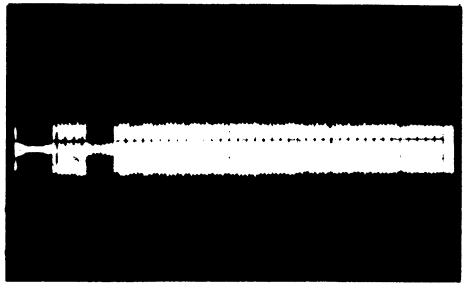


Fig 12. PB BELL Adjustment

•REC BELL Adjustment

Equipment: Oscilloscope
Test Point: TP0320 Main. B
Adjustment: FL0310 Main. B

1) Apply a SECAM color bar signal to the video input jack on the rear panel.
2) Connect a channel-1 scope probe to TP0320 (0.5V/div. 10 usec/div)
3) Insert a blank tape and make a recording.
4) Adjust FL0310 so that CH-1 and CH-2 of the magenta color level of fifth is same (Not doubling picture)

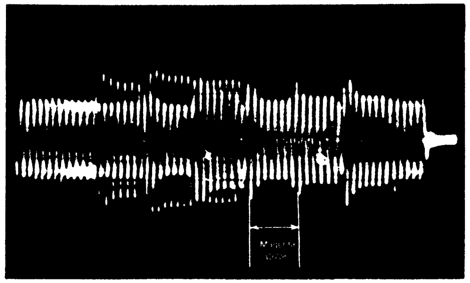


Fig 13. REC BELL Adjustment

•VIDEO SYNC Timing Adjustment

Equipment: Oscilloscope
Test Point: TP0301 Main. B
Adjustment: VR0310 Main. B

1) Load the instrument with an alignment tape and playback the color bar signal (Alignment tape SR2-3)
2) Connect a channel-1 scope probe to TP0301 (0.5V/div, 10usec/div)
3) Adjust the VR0310 so that the noise gate pulse position is 1.2±0.2 usec from the H-SYNC signal.

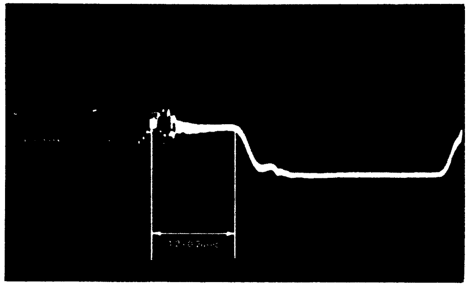


Fig 14. Video SYNC Timing Adjustment

•Burst Gate Timing Adjustment

Equipment: Oscilloscope
Test Point: TP0301 Main. B
Adjustment: VR0311 Main. B

1) Load the instrument with an alignment tape and playback the color bar signal (Alignment tape SR2-3)
2) Connect a channel-1 scope probe to TP0301 (0.5V/div, 10usec/div)
3) Adjust the VR0311 so that the noise gate pulse position is 1.2±0.2 usec from the H-SYNC signal.

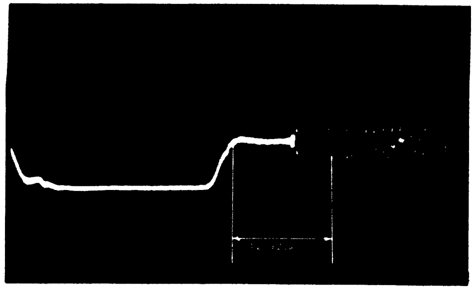


Fig 15. Burst Gate Timing Adjustment

•TUNER/DEMODULATOR SECTION in Main A PCB.

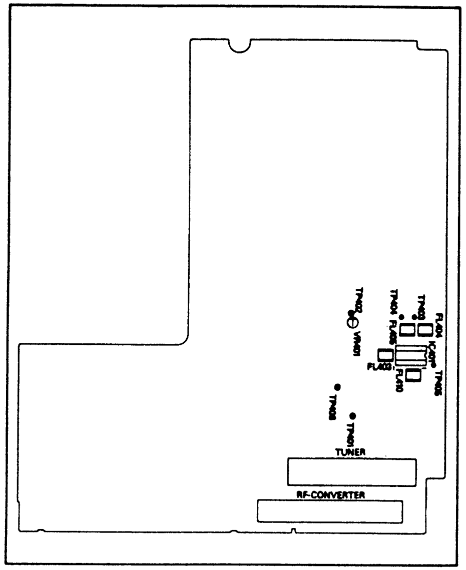


Fig. 16 TUNER/DEMODULATOR SECTION in Main. A PCB-Component Side

•VIF Adjustment

Equipment:	Sweep Generator Monitorscope	
Test Point:	TP406 (Video output)	Main. A
Adjust:	FL405 (VIF-DET TANK)	Main. A

This adjustment makes the sync detecting reference signal tuning circuit of the picture-IF circuit resonate with 38.9MHz and suppresses mixture of the sound-IF signal.

1) Place the instrument in the E-E mode.
2) Remove a connector CN101 and connect a DC bias supply of 15V, 12V to the pin 1,2 of a connector CN104 on the Main. A PCB.
3) Connect a DC bias supply of 5V to TP405.
4) Connect the Sweep Generator Output to tuner TP within the Tuner unit. (Fig. 17)
5) Connect a Monitor Scope Input to TP406.
6) Connect a 100 damping resistor between TP403 and TP404.
7) Adjust the Core (FL410) in the Tuner section shown in Fig. 18.
8) Remove a 100 damping resistor.
9) Adjust the VIF Control (FL405) for maximum detection of 38.9MHz maker. (Fig. 19)

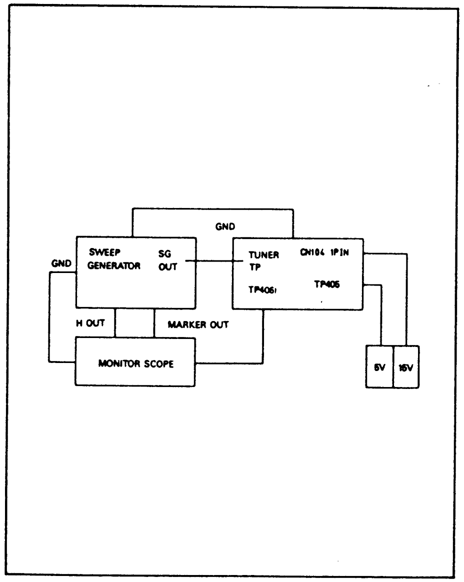


Fig. 17 Composition for VIF Adjustment

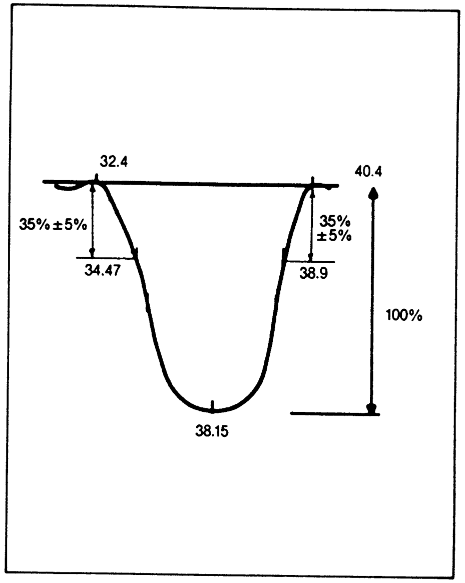


Fig. 18 Illustration for balance between 38.9 MHz and color signal

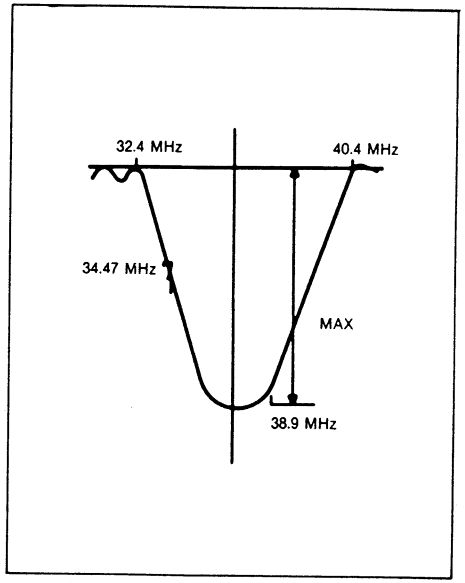


Fig. 19 VIF 38.9MHz Maximum Detection

•AFT Adjustment

Equipment:	Sweep generator, Monitorscope	
Test point:	TP402	Main. A
Adjustment:	FL404	Main. A

1) After adjustment of VIF, connect the monitorscope input to TP402.
2) Adjust the AFT (FL404) in the Tuner unit shown in Fig. 20

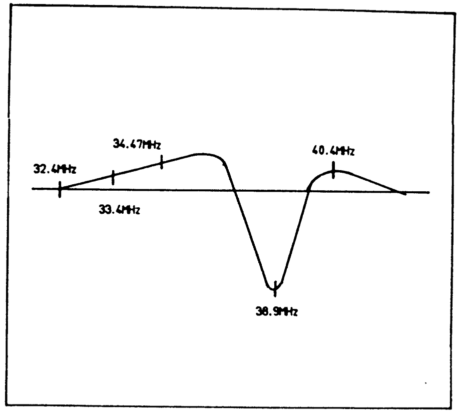


Fig. 20 AFT Adjustment

•SIF Adjustment

Equipment:	Oscilloscope	
Test points:	TP0501 (Audio Input)	Main. B
Adjust:	FL403 (5.5MHz Tuning Coil)	Main. A
	FL0403 (1MHz OSC Coil)	SIF-CON

This adjustment suppresses the audio distortion and optimizes the linearity response of audio. Misadjustment of the SIF may cause the audio buzz by the increasing of the THD (Total Harmonic Distortion).

1) Apply a 1KHz audio signal to the RF Input Terminal on the rear panel in B/G signal.
2) Connect a channel-1 scope probe (0.2V/div.) to TP0501.
3) Adjust the SIF Control (FL403) for 1.0Vp-p.
4) Apply a 1KHz audio signal to the RF input terminal on the rear panel in SECAM D/K signal.
5) Adjust the SIF control (FL0403: SIF CON P.C.B) for 1.0Vp-p.

•RF AGC Adjustment

Equipment:	TV CHANNEL SIGNAL GENERATOR Oscilloscope or DC Voltmeter	
Test Point:	TP401 (Tuner RF AGC Input)	Main. A
Adjust:	VR401 (RF AGC Control)	Main. A

This adjustment determines the point where the AGC is activated.

1) Apply a PAL color bar signal to the Video Input Terminal of the TV Channel Signal Generator. (Fig. 21)
2) Set the Channel Selector to CH2 (48.25 MHz in B/G signal)
3) Apply the Output for the Generator to the RF IN Terminal on the rear panel. Using the Attenuator, adjust the input signal level for 70dBu measured at the RF IN Terminal. (Fig. 21)
4) Connect a channel-1 scope probe (1V/div.) to TP401.
5) Turn the VCR power on and select TV Mode with SW709.
6) Set the channel on the front panel to CH 2.
7) Adjust the RF AGC Control (VR401) for 4.4V±0.1V
8) After adjusting the input level of the RF IN terminal for 60dBu, check the condition of screen. If there is some Noise, adjust VR401 so that the Noise disappears.
9) And adjust the input level of the RF IN Terminal for 100dBu, then check the condition of screen. If there are some Saturations (unstable picture or color, etc), adjust VR401 again so that the Saturation phenominon disappear.

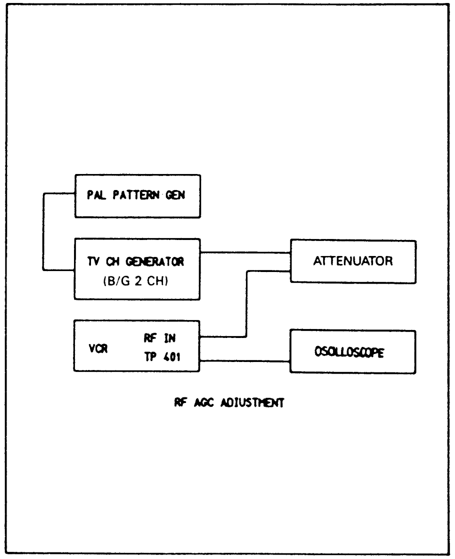
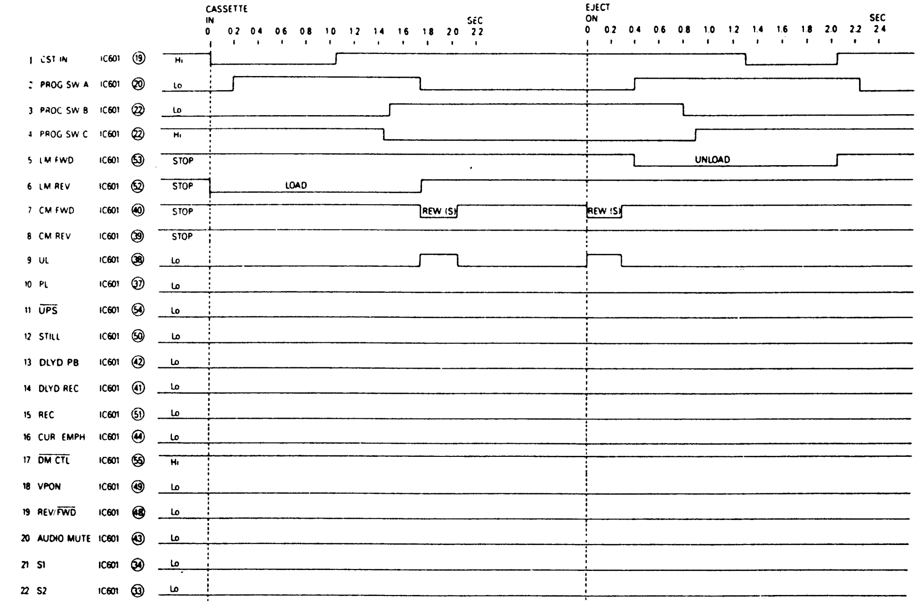

PAL PATTERN GEN
TV CH GENERATOR
(B/G 2 CH)
ATTENUATOR
VCR
RF IN
TP 401
OSCILLOSCOPE
RF AGC ADJUSTMENT

Fig. 21 RF AGC Adjustment

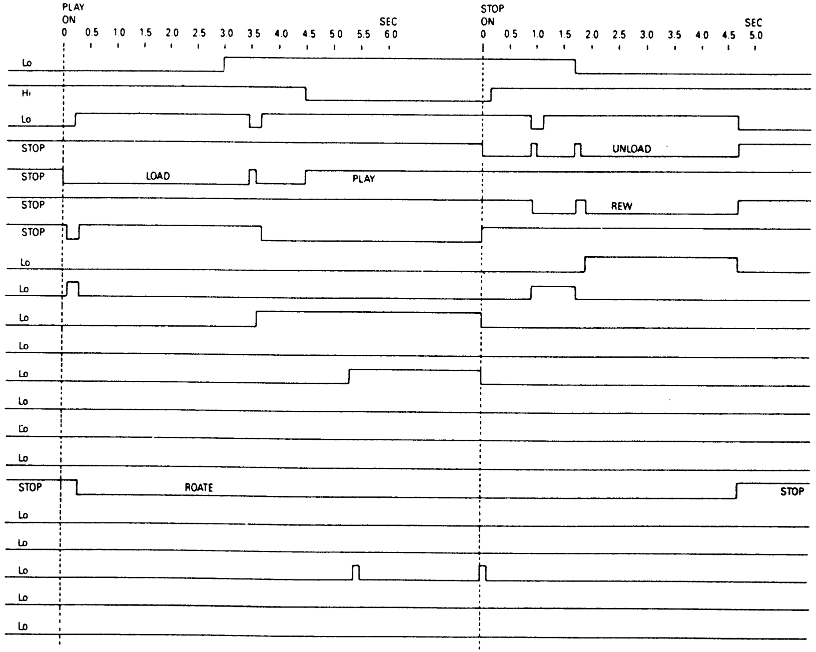
5. TIMING CHART/TROUBLESHOOTING GUIDER

Timing chart

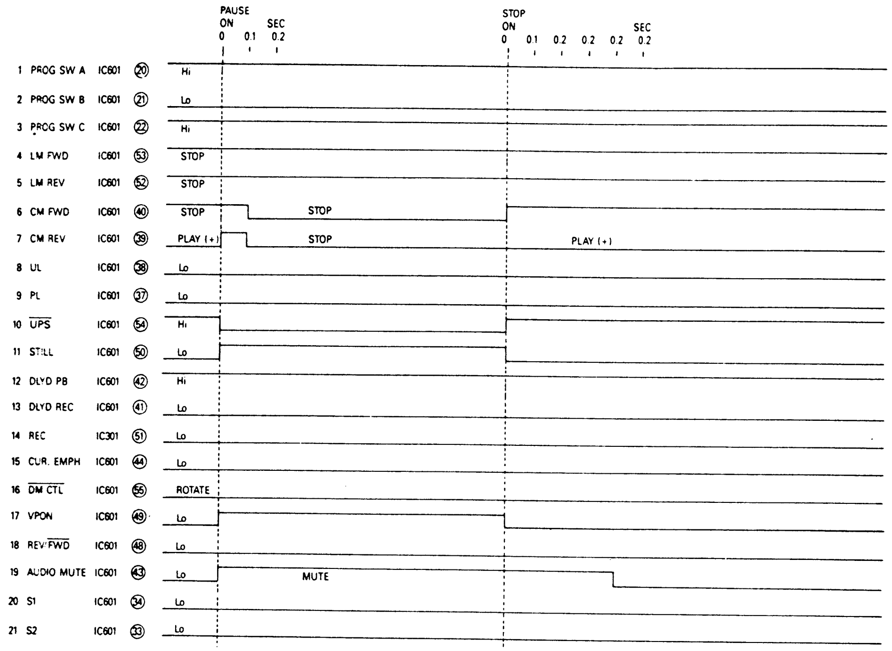
CASSETTE LOAD/UNLOAD


CASSETTE IN
0 02 04 06 08 10 12 14 16 18 20 22 SEC
EJECT ON
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 SEC
1 CST IN IC601 ⑲ Hi
2 PROG SW A IC601 ⑳ Lo
3 PROC SW B IC601 ㉒ Lo
4 PROG SW C IC601 ㉒ Hi
5 LM FWD IC601 (53) STOP
UNLOAD
6 LM REV IC601 (52) STOP
LOAD
7 CM FWD IC601 (40) STOP
REW (S)
REW (S)
8 CM REV IC601 (39) STOP
9 UL IC601 (38) Lo
10 PL IC601 (37) Lo
11 UPS IC601 (54) Lo
12 STILL IC601 (50) Lo
13 DLYD PB IC601 (42) Lo
14 DLYD REC IC601 (41) Lo
15 REC IC601 (51) Lo
16 CUR EMPH IC601 (44) Lo
17 DM CTL IC601 (55) Hi
18 VPON IC601 (49) Lo
19 REV/FWD IC601 (48) Lo
20 AUDIO MUTE IC601 (43) Lo
21 S1 IC601 (34) Lo
22 S2 IC601 (33) Lo

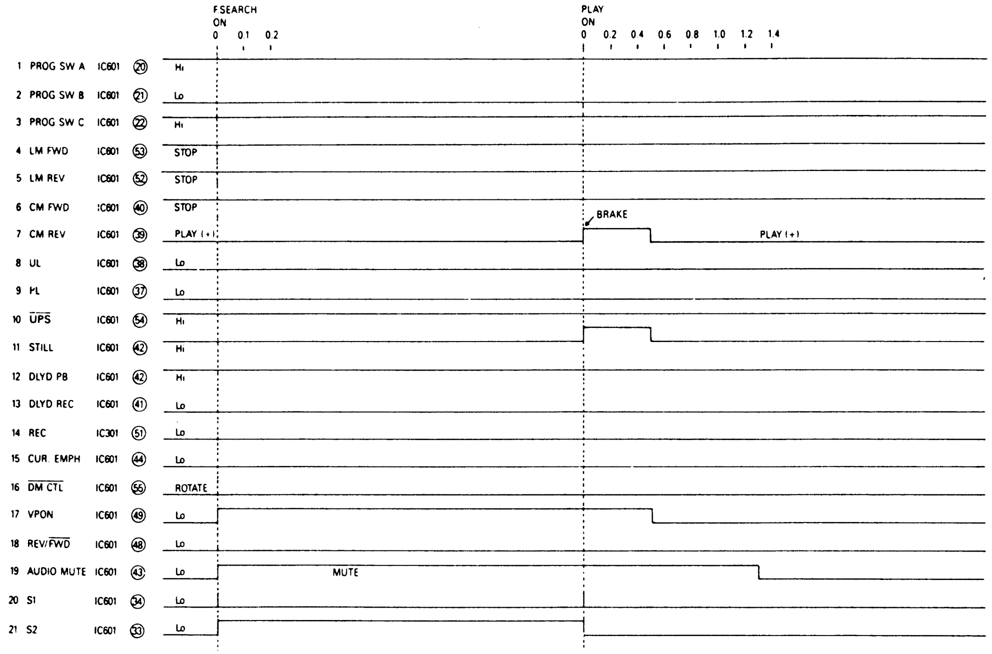
STOP/PLAY/STOP


PLAY ON
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 SEC
STOP ON
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 SEC
1 PROG SW A IC601 ⑳ Lo
2 PROG SW B IC601 ㉑ Hi
3 PROG SW C IC601 ㉒ Lo
4 LM FWD IC601 (53) STOP
UNLOAD
5 LM REV IC601 (52) STOP
LOAD
PLAY
6 CM FWD IC601 (40) STOP
REW
7 CM REV IC601 (39) STOP
8 UL IC601 (38) Lo
9 PL IC601 (37) Lo
10 UPS IC601 (54) Lo
11 STILL IC601 (50) Lo
12 DLYD PB IC601 (42) Lo
13 DLYD REC IC601 (41) Lo
14 REC IC601 (51) Lo
15 CUR. EMPH IC601 (44) Lo
16 DM CTL IC601 (55) STOP
ROATE
STOP
17 VPON IC601 (49) Lo
18 REV/FWD IC601 (48) Lo
19 AUDIO MUTE IC601 (43) Lo
20 S1 IC601 (34) Lo
21 S2 IC601 (33) Lo

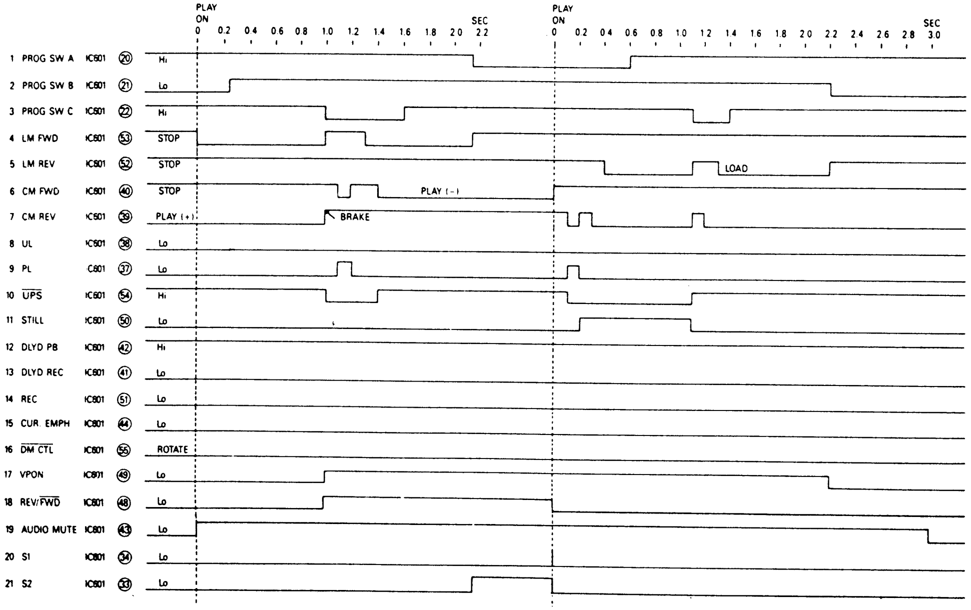
PLAY/PAUSE/PLAY


PAUSE ON
SEC
0 0.1 0.2
STOP ON
SEC
0 0.1 0.2 0.2 0.2 0.2
1 PROG SW A IC601 ⑳ Hi
2 PROG SW B IC601 ㉑ Lo
3 PROG SW C IC601 ㉒ Hi
4 LM FWD IC601 (53) STOP
5 LM REV IC601 (52) STOP
6 CM FWD IC601 ㊵ STOP
STOP
7 CM REV IC601 ㊴ PLAY (+)
STOP
PLAY (+)
8 UL IC601 ㊳ Lo
9 PL IC601 ㊲ Lo
10 UPS IC601 (54) Hi
11 STILL IC601 ㊿ Lo
12 DLYD PB IC601 ㊷ Hi
13 DLYD REC IC601 ㊶ Lo
14 REC IC301 (51) Lo
15 CUR. EMPH IC601 ㊹ Lo
16 DM CTL IC601 (55) ROTATE
17 VPON IC601 ㊾ Lo
18 REV/FWD IC601 ㊽ Lo
19 AUDIO MUTE IC601 ㊸ Lo
MUTE
20 S1 IC601 ㉞ Lo
21 S2 IC601 ㉝ Lo

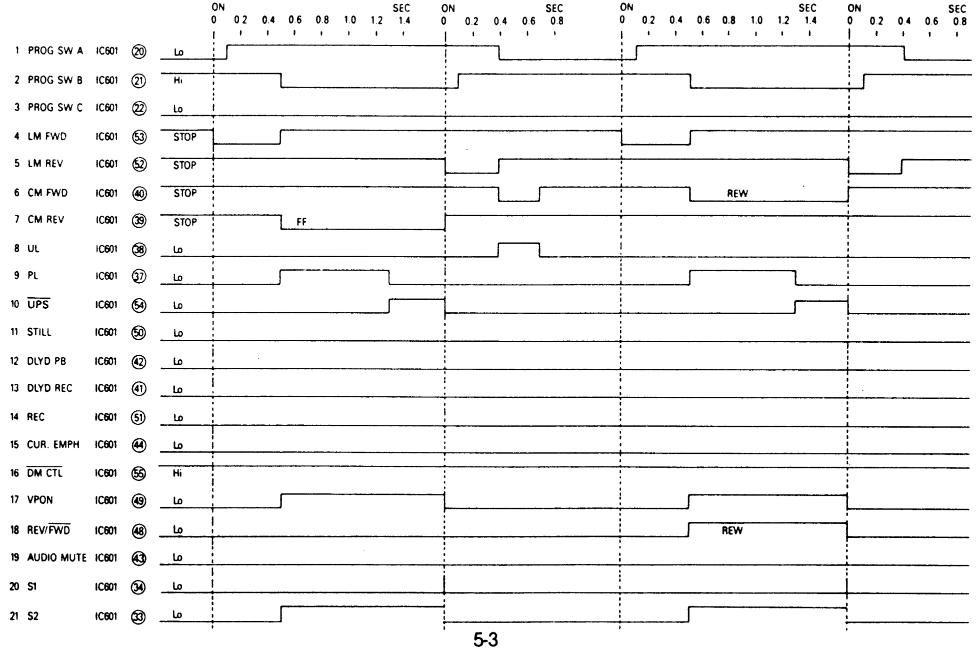
PLAY/F. SEARCH/PLAY


F.SEARCH ON
0 0.1 0.2
PLAY ON
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4
1 PROG SW A IC601 ⑳ Hi
2 PROG SW B IC601 ㉑ Lo
3 PROG SW C IC601 ㉒ Hi
4 LM FWD IC601 (53) STOP
5 LM REV IC601 (52) STOP
6 CM FWD IC601 ㊵ STOP
BRAKE
7 CM REV IC601 ㊴ PLAY (+)
PLAY (+)
8 UL IC601 ㊳ Lo
9 PL IC601 ㊲ Lo
10 UPS IC601 (54) Hi
11 STILL IC601 ㊷ Hi
12 DLYD PB IC601 ㊷ Hi
13 DLYD REC IC601 ㊶ Lo
14 REC IC301 (51) Lo
15 CUR. EMPH IC601 ㊹ Lo
16 DM CTL IC601 (55) ROTATE
17 VPON IC601 ㊾ Lo
18 REV/FWD IC601 ㊽ Lo
19 AUDIO MUTE IC601 ㊸ Lo
MUTE
20 S1 IC601 ㉞ Lo
21 S2 IC601 ㉝ Lo

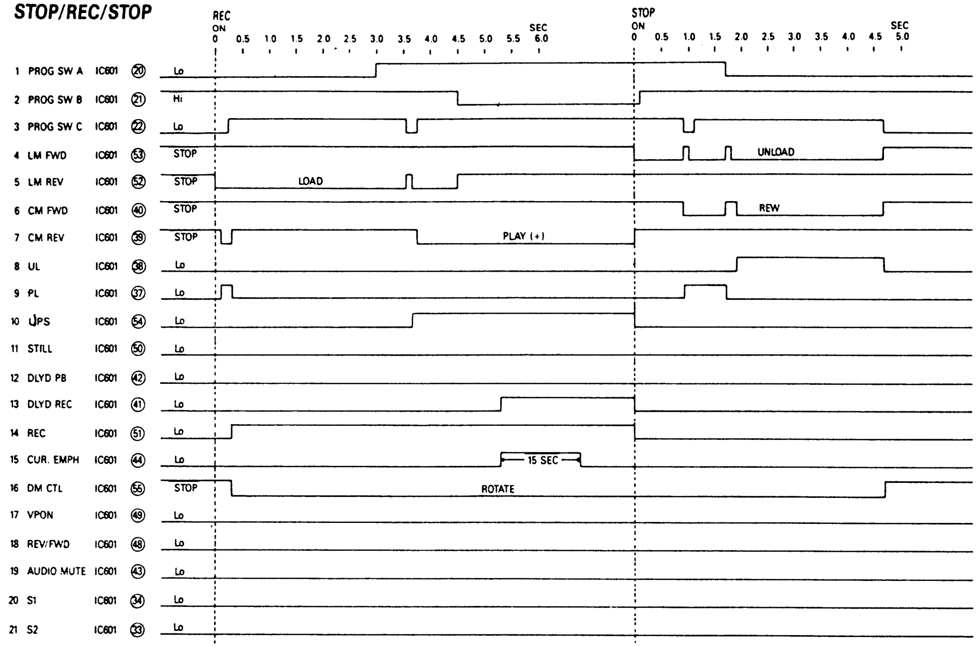
PLAY/R.SEARCH/PLAY


PLAY ON
SEC
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2
PLAY ON
SEC
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0
1 PROG SW A IC601 ⑳ Hi
2 PROG SW B IC601 ㉑ Lo
3 PROG SW C IC601 ㉒ Hi
4 LM FWD IC601 (53) STOP
5 LM REV IC601 (52) STOP
LOAD
6 CM FWD IC601 ㊵ STOP
PLAY (−)
7 CM REV IC601 ㊴ PLAY (+)
BRAKE
8 UL IC601 ㊳ Lo
9 PL C601 ㊲ Lo
10 UPS IC601 (54) Hi
11 STILL IC601 ㊿ Lo
12 DLYD PB IC601 ㊷ Hi
13 DLYD REC IC601 ㊶ Lo
14 REC IC601 (51) Lo
15 CUR. EMPH IC601 ㊹ Lo
16 DM CTL IC601 (55) ROTATE
17 VPON IC601 ㊾ Lo
18 REV/FWD IC601 ㊽ Lo
19 AUDIO MUTE IC601 ㊸ Lo
20 S1 IC601 ㉞ Lo
21 S2 IC601 ㉝ Lo

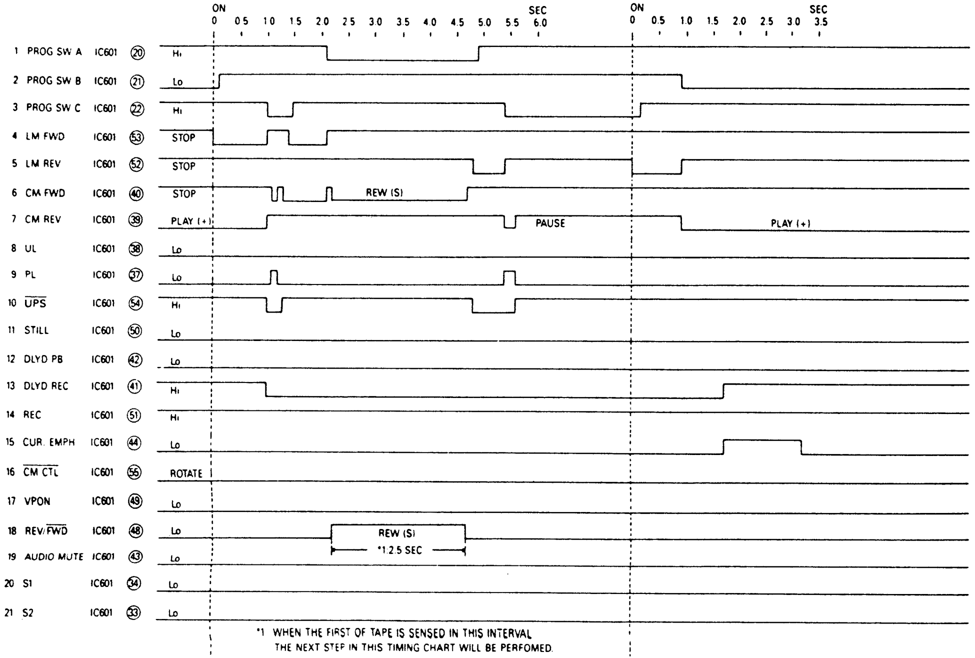
STOP/FF. OR REW/STOP


FF ON
SEC
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4
STOP ON
SEC
0 0.2 0.4 0.6 0.8
REW ON
SEC
0 0.2 0.4 0.6 0.8 1.0 1.2 1.4
STOP ON
SEC
0 0.2 0.4 0.6 0.8
1 PROG SW A IC601 ⑳ Lo
2 PROG SW B IC601 ㉑ Hi
3 PROG SW C IC601 ㉒ Lo
4 LM FWD IC601 (53) STOP
5 LM REV IC601 (52) STOP
6 CM FWD IC601 ㊵ STOP
REW
7 CM REV IC601 ㊴ STOP
FF
8 UL IC601 ㊳ Lo
9 PL IC601 ㊲ Lo
10 UPS IC601 (54) Lo
11 STILL IC601 ㊿ Lo
12 DLYD PB IC601 ㊷ Lo
13 DLYD REC IC601 ㊶ Lo
14 REC IC601 (51) Lo
15 CUR. EMPH IC601 ㊹ Lo
16 DM CTL IC601 (55) Hi
17 VPON IC601 ㊾ Lo
18 REV/FWD IC601 ㊽ Lo
REW
19 AUDIO MUTE IC601 ㊸ Lo
20 S1 IC601 ㉞ Lo
21 S2 IC601 ㉝ Lo

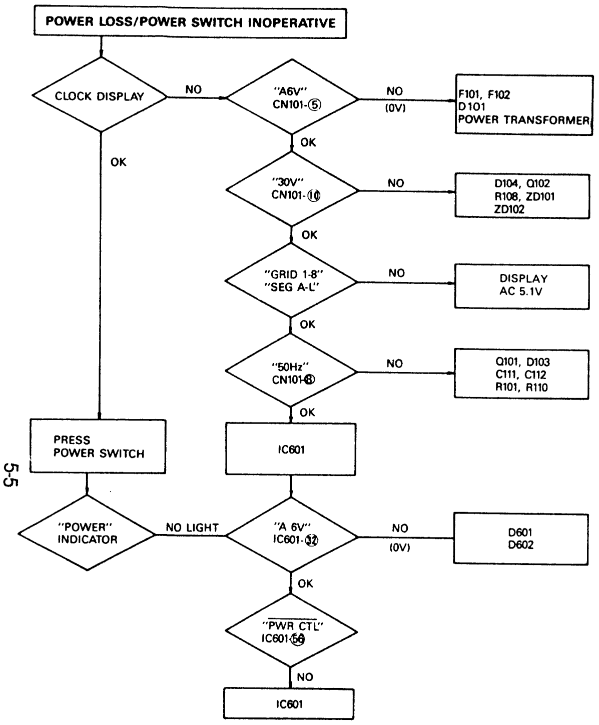
STOP/REC/STOP

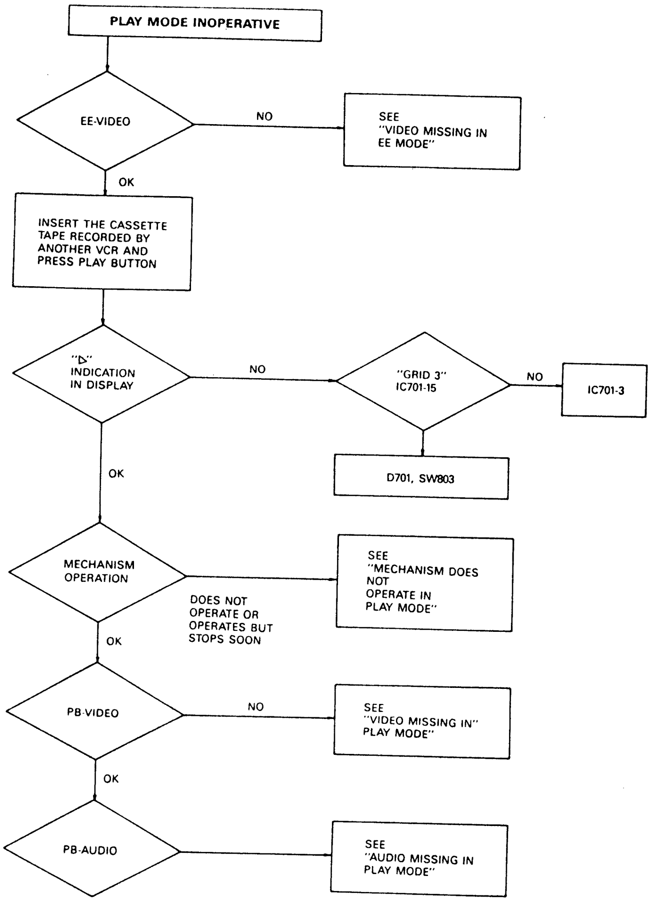

REC ON
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 SEC
STOP ON
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 SEC
1 PROG SW A IC601 ⑳ Lo
2 PROG SW B IC601 ㉑ Hi
3 PROG SW C IC601 ㉒ Lo
4 LM FWD IC601 (53) STOP
5 LM REV IC601 (52) STOP
6 CM FWD IC601 ㊵ STOP
7 CM REV IC601 ㊴ STOP
8 UL IC601 ㊳ Lo
9 PL IC601 ㊲ Lo
10 UPS IC601 (54) Lo
11 STILL IC601 ㊿ Lo
12 DLYD PB IC601 ㊷ Lo
13 DLYD REC IC601 ㊶ Lo
14 REC IC601 (51) Lo
15 CUR. EMPH IC601 ㊹ Lo
16 DM CTL IC601 (56) STOP
17 VPON IC601 ㊾ Lo
18 REV/FWD IC601 ㊽ Lo
19 AUDIO MUTE IC601 ㊸ Lo
20 S1 IC601 ㉞ Lo
21 S2 IC601 ㉝ Lo
LOAD
UNLOAD
REW
PLAY (+)
15 SEC
ROTATE

REC/PAUSE/REC

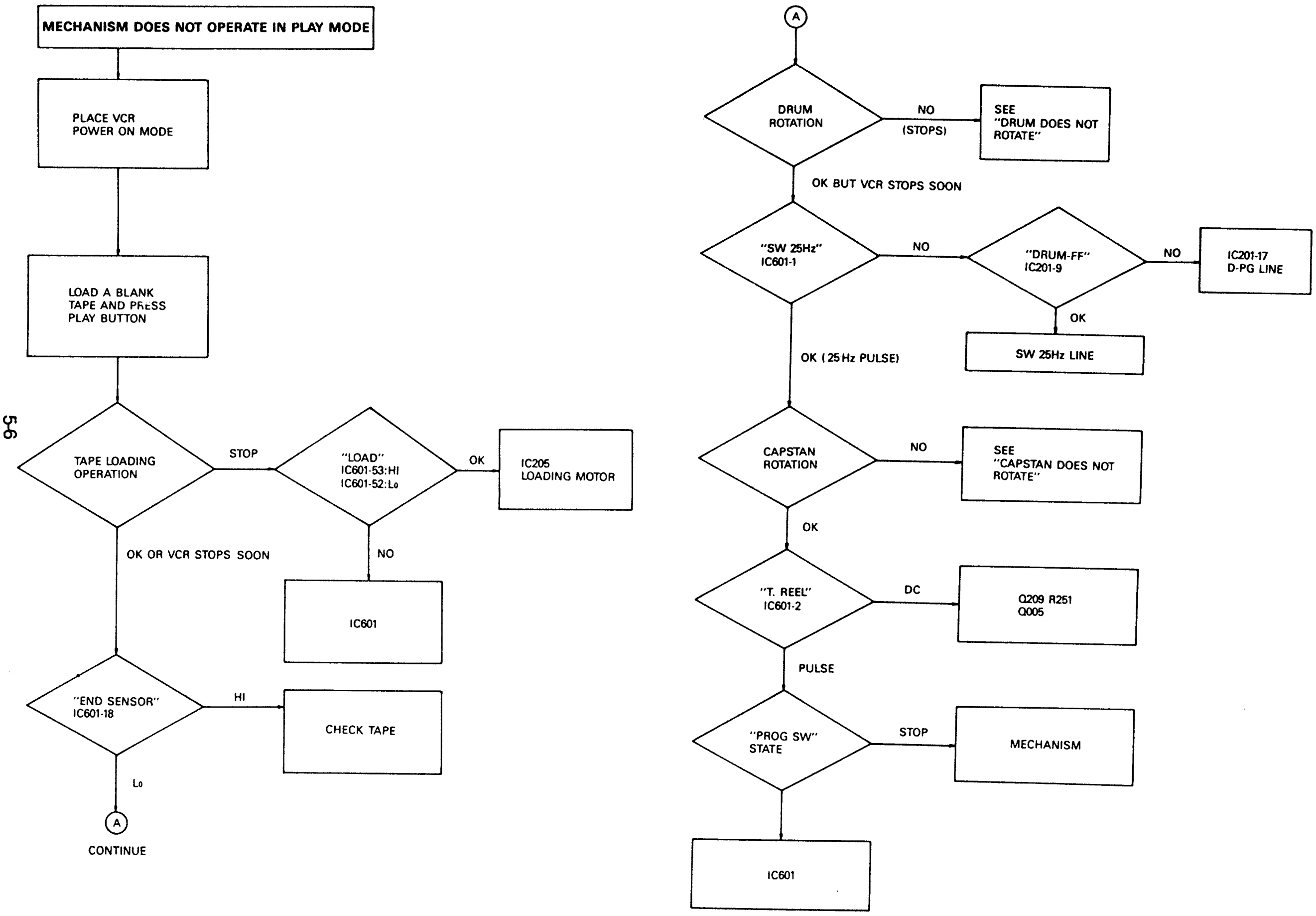

PAUSE ON
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 SEC
REC ON
0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 SEC
1 PROG SW A IC601 ⑳ Hi
2 PROG SW B IC601 ㉑ Lo
3 PROG SW C IC601 ㉒ Hi
4 LM FWD IC601 (53) STOP
5 LM REV IC601 (52) STOP
6 CM FWD IC601 ㊵ STOP
7 CM REV IC601 ㊴ PLAY (+)
8 UL IC601 ㊳ Lo
9 PL IC601 ㊲ Lo
10 UPS IC601 (54) Hi
11 STILL IC601 ㊿ Lo
12 DLYD PB IC601 ㊷ Lo
13 DLYD REC IC601 ㊶ Hi
14 REC IC601 (51) Hi
15 CUR. EMPH IC601 ㊹ Lo
16 CM CTL IC601 (56) ROTATE
17 VPON IC601 ㊾ Lo
18 REV/FWD IC601 ㊽ Lo
19 AUDIO MUTE IC601 ㊸ Lo
20 S1 IC601 ㉞ Lo
21 S2 IC601 ㉝ Lo
REW (S)
PAUSE
PLAY (+)
REW (S)
*1 2.5 SEC

*1 WHEN THE FIRST OF TAPE IS SENSED IN THIS INTERVAL
THE NEXT STEP IN THIS TIMING CHART WILL BE PERFOMED.

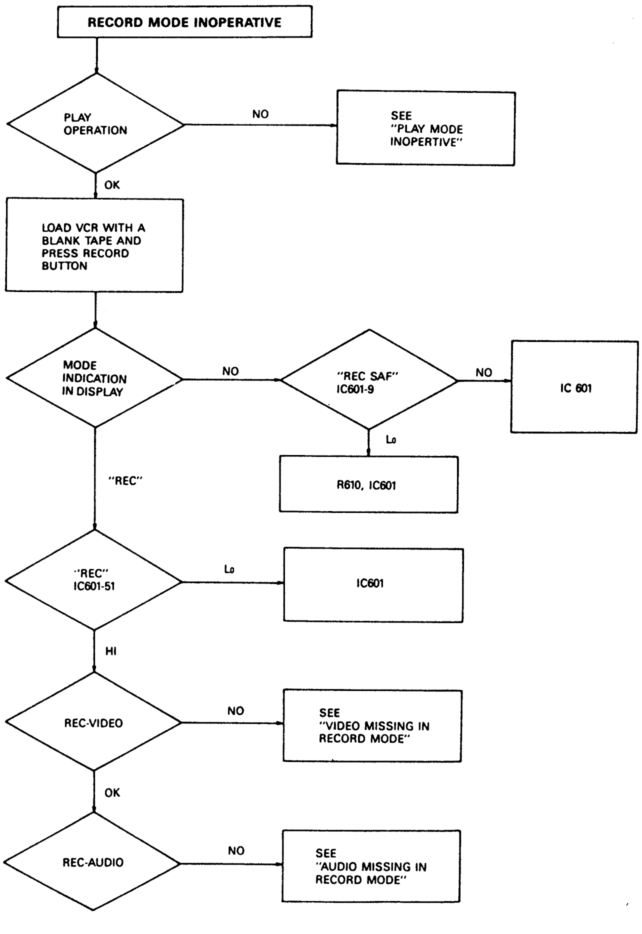

POWER LOSS/POWER SWITCH INOPERATIVE
CLOCK DISPLAY
NO
OK
"A6V" CN101-⑤
NO (0V)
F101, F102
D101
POWER TRANSFORMER
OK
"30V" CN101-⑩
NO
D104, Q102
R108, ZD101
ZD102
OK
"GRID 1-8" "SEG A-L"
NO
DISPLAY AC 5.1V
OK
"50Hz" CN101-⑧
NO
Q101, D103
C111, C112
R101, R110
OK
IC601
PRESS POWER SWITCH
"POWER" INDICATOR
NO LIGHT
"A 6V" IC601-㉜
NO (0V)
D601
D602
OK
"PWR CTL" IC601-(56)
NO
IC601


PLAY MODE INOPERATIVE
EE-VIDEO
NO
SEE "VIDEO MISSING IN EE MODE"
OK
INSERT THE CASSETTE TAPE RECORDED BY ANOTHER VCR AND PRESS PLAY BUTTON
"▷" INDICATION IN DISPLAY
NO
"GRID 3" IC701-15
NO
IC701-3
D701, SW803
OK
MECHANISM OPERATION
DOES NOT OPERATE OR OPERATES BUT STOPS SOON
SEE "MECHANISM DOES NOT OPERATE IN PLAY MODE"
OK
PB-VIDEO
NO
SEE "VIDEO MISSING IN" PLAY MODE"
OK
PB-AUDIO
SEE "AUDIO MISSING IN PLAY MODE"

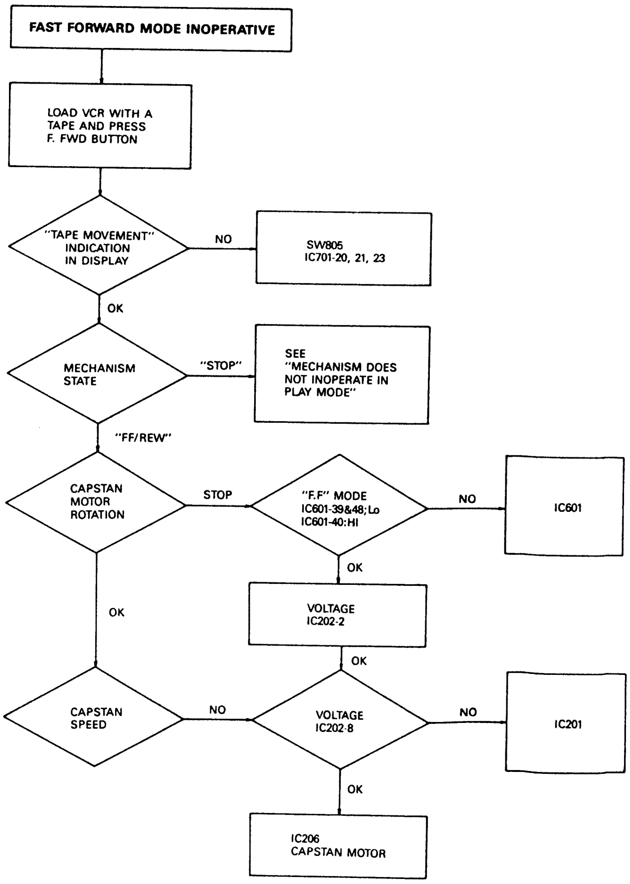
MECHANISM DOES NOT OPERATE IN PLAY MODE

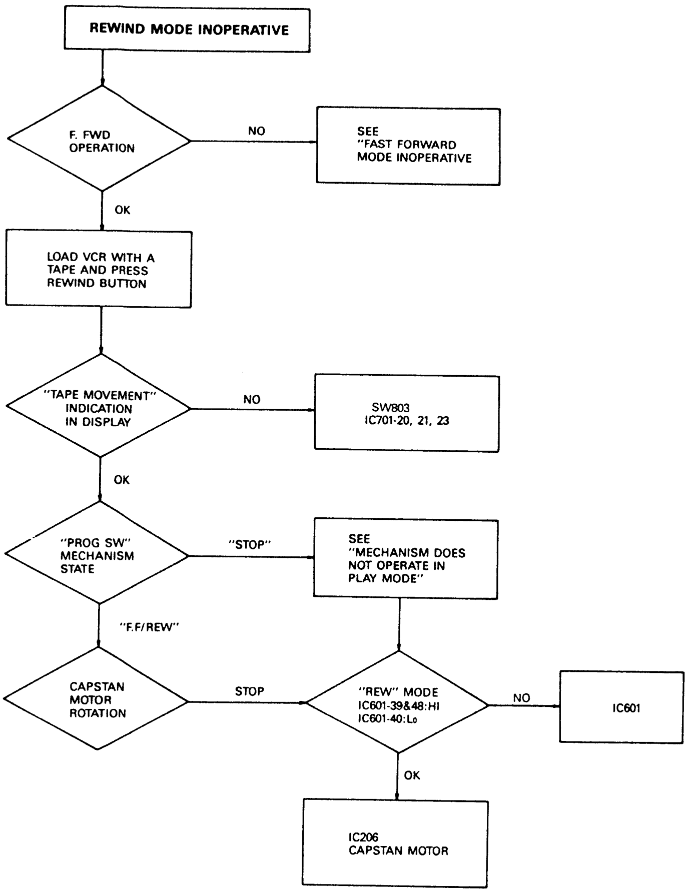

PLACE VCR POWER ON MODE
LOAD A BLANK TAPE AND PRESS PLAY BUTTON
TAPE LOADING OPERATION
STOP
"LOAD" IC601-53:HI IC601-52:Lo
OK
IC205 LOADING MOTOR
NO
IC601
OK OR VCR STOPS SOON
"END SENSOR" IC601-18
HI
CHECK TAPE
Lo
A
CONTINUE
A
DRUM ROTATION
NO (STOPS)
SEE "DRUM DOES NOT ROTATE"
OK BUT VCR STOPS SOON
"SW 25Hz" IC601-1
NO
"DRUM-FF" IC201-9
NO
IC201-17 D-PG LINE
OK
SW 25Hz LINE
OK (25Hz PULSE)
CAPSTAN ROTATION
NO
SEE "CAPSTAN DOES NOT ROTATE"
OK
"T. REEL" IC601-2
DC
Q209 R251 Q005
PULSE
"PROG SW" STATE
STOP
MECHANISM
IC601

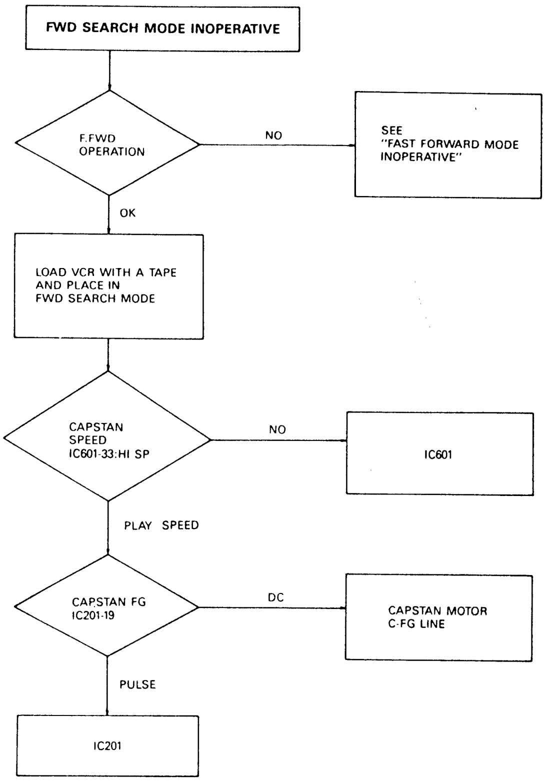
RECORD MODE INOPERATIVE

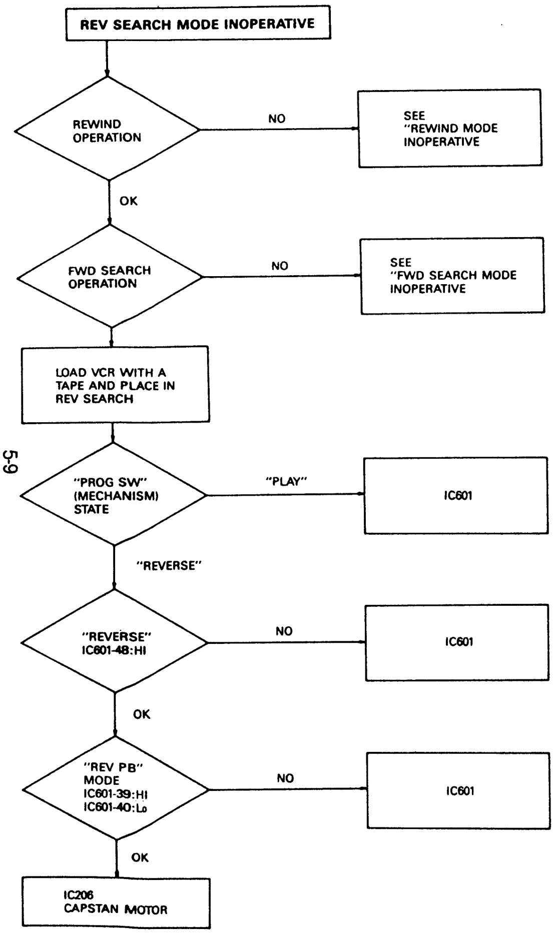

PLAY OPERATION
NO
SEE "PLAY MODE INOPERTIVE"
OK
LOAD VCR WITH A BLANK TAPE AND PRESS RECORD BUTTON
MODE INDICATION IN DISPLAY
NO
"REC SAF" IC601-9
NO
IC 601
Lo
R610, IC601
"REC"
"REC" IC601-51
Lo
IC601
HI
REC-VIDEO
NO
SEE "VIDEO MISSING IN RECORD MODE"
OK
REC-AUDIO
NO
SEE "AUDIO MISSING IN RECORD MODE"

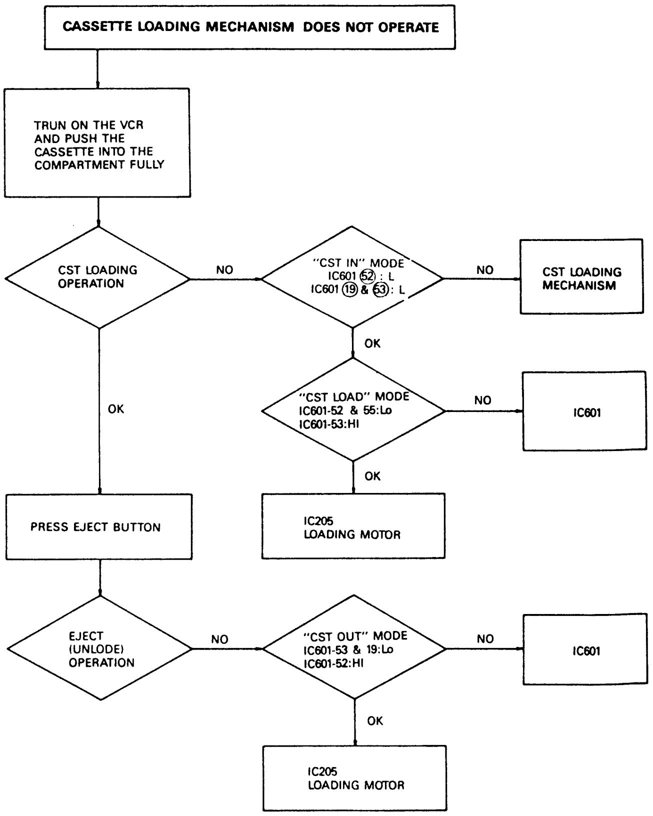
FAST FORWARD MODE INOPERATIVE

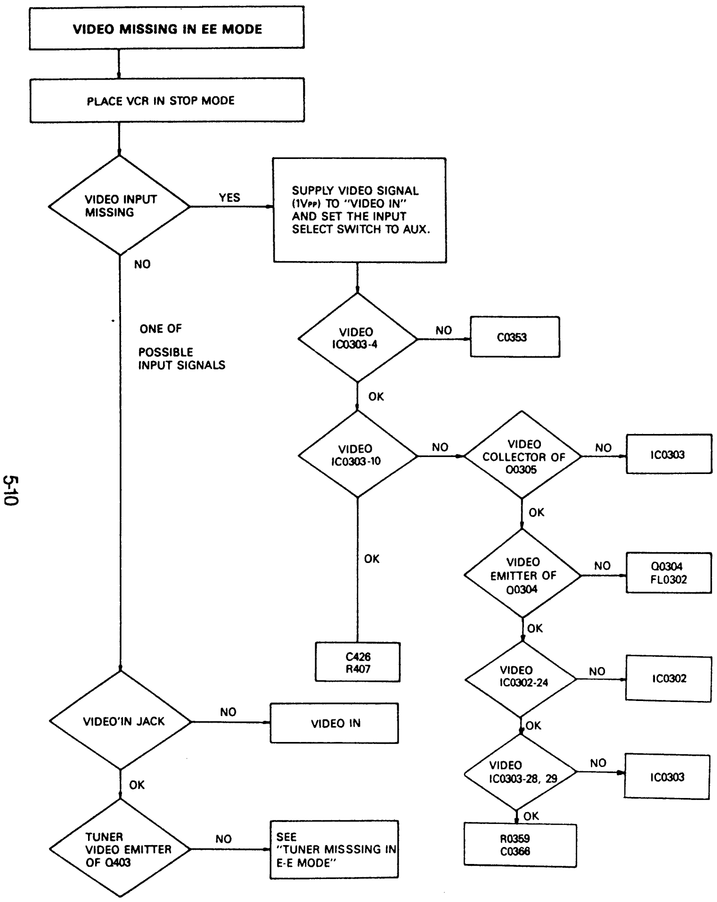

LOAD VCR WITH A TAPE AND PRESS F. FWD BUTTON
"TAPE MOVEMENT" INDICATION IN DISPLAY
NO
SW805 IC701-20, 21, 23
OK
MECHANISM STATE
"STOP"
SEE "MECHANISM DOES NOT INOPERATE IN PLAY MODE"
"FF/REW"
CAPSTAN MOTOR ROTATION
STOP
"F.F" MODE IC601-39&48;Lo IC601-40:HI
NO
IC601
OK
VOLTAGE IC202-2
OK
OK
CAPSTAN SPEED
NO
VOLTAGE IC202-8
NO
IC201
OK
IC206 CAPSTAN MOTOR

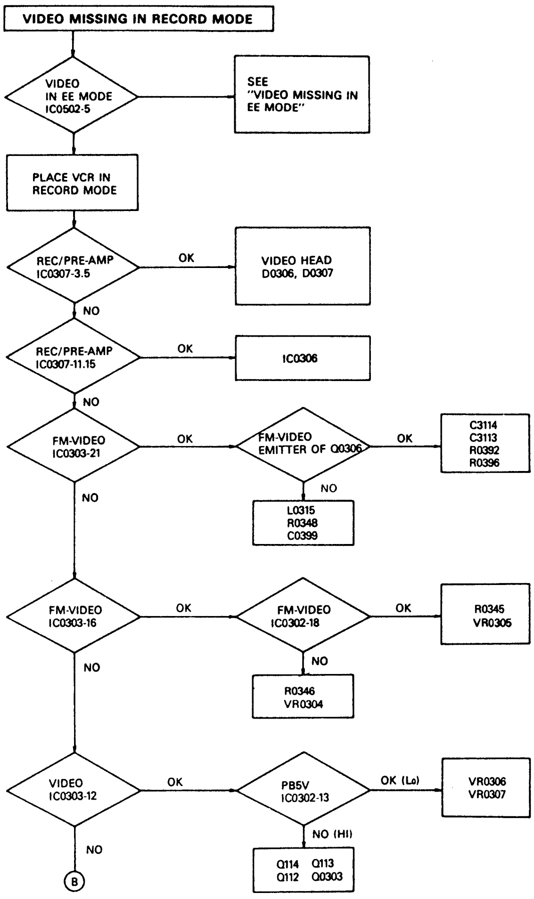

REWIND MODE INOPERATIVE
F. FWD OPERATION
NO
SEE "FAST FORWARD MODE INOPERATIVE
OK
LOAD VCR WITH A TAPE AND PRESS REWIND BUTTON
"TAPE MOVEMENT" INDICATION IN DISPLAY
NO
SW803 IC701-20, 21, 23
OK
"PROG SW" MECHANISM STATE
"STOP"
SEE "MECHANISM DOES NOT OPERATE IN PLAY MODE"
"F.F/REW"
CAPSTAN MOTOR ROTATION
STOP
"REW" MODE IC601-39&48:HI IC601-40:Lo
NO
IC601
OK
IC206 CAPSTAN MOTOR

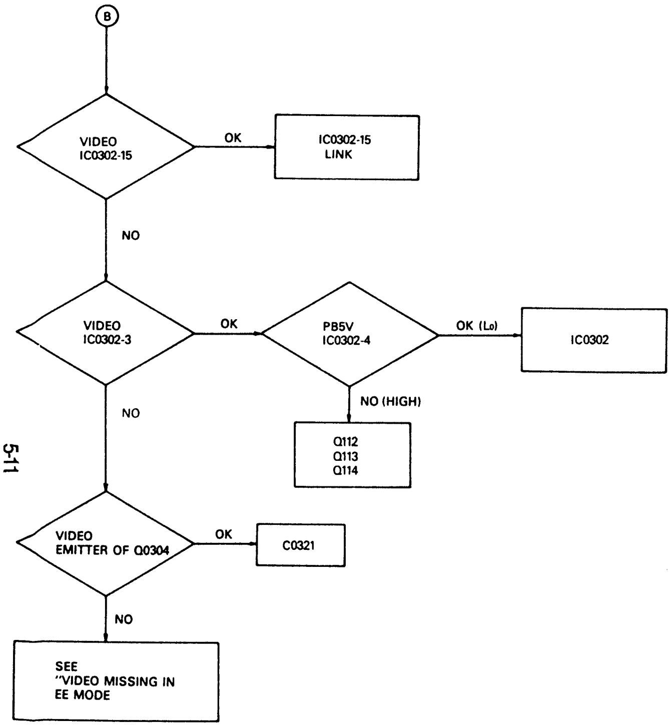

FWD SEARCH MODE INOPERATIVE
F.FWD OPERATION
NO
SEE "FAST FORWARD MODE INOPERATIVE"
OK
LOAD VCR WITH A TAPE AND PLACE IN FWD SEARCH MODE
CAPSTAN SPEED IC601-33:HI SP
NO
IC601
PLAY SPEED
CAPSTAN FG IC201-19
DC
CAPSTAN MOTOR C-FG LINE
PULSE
IC201

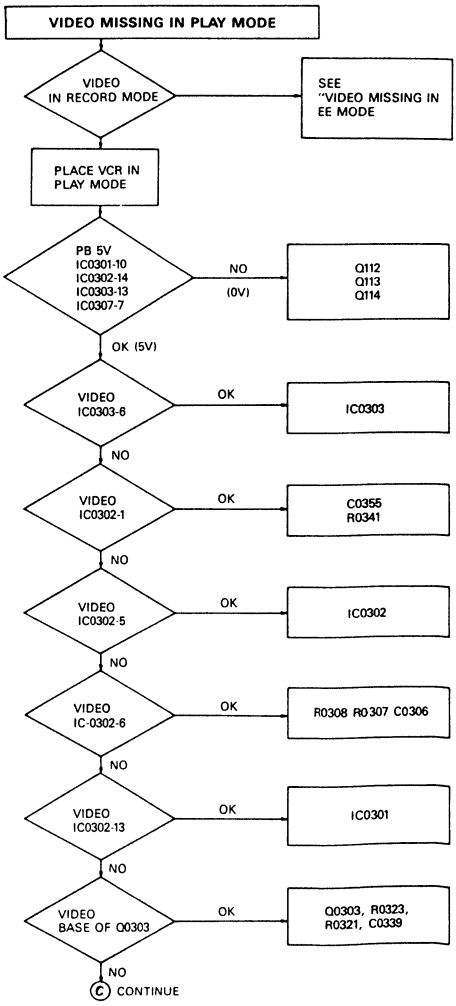

REV SEARCH MODE INOPERATIVE
REWIND OPERATION
NO
SEE "REWIND MODE INOPERATIVE
OK
FWD SEARCH OPERATION
NO
SEE "FWD SEARCH MODE INOPERATIVE
LOAD VCR WITH A TAPE AND PLACE IN REV SEARCH
"PROG SW" (MECHANISM) STATE
"PLAY"
IC601
"REVERSE"
"REVERSE" IC601-48:HI
NO
IC601
OK
"REV PB" MODE IC601-39:HI IC601-40:Lo
NO
IC601
OK
IC206 CAPSTAN MOTOR

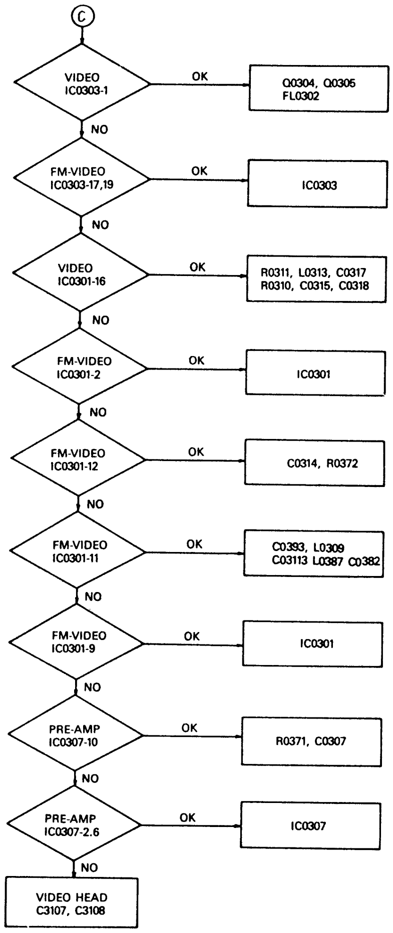

CASSETTE LOADING MECHANISM DOES NOT OPERATE
TRUN ON THE VCR AND PUSH THE CASSETTE INTO THE COMPARTMENT FULLY
CST LOADING OPERATION
NO
"CST IN" MODE IC601 (52) : L IC601 ⑲ & (53) : L
NO
CST LOADING MECHANISM
OK
"CST LOAD" MODE IC601-52 & 55:Lo IC601-53:HI
NO
IC601
OK
IC205 LOADING MOTOR
OK
PRESS EJECT BUTTON
EJECT (UNLODE) OPERATION
NO
"CST OUT" MODE IC601-53 & 19:Lo IC601-52:HI
NO
IC601
OK
IC205 LOADING MOTOR


VIDEO MISSING IN EE MODE
PLACE VCR IN STOP MODE
VIDEO INPUT MISSING
YES
SUPPLY VIDEO SIGNAL (1Vpp) TO "VIDEO IN" AND SET THE INPUT SELECT SWITCH TO AUX.
NO
ONE OF POSSIBLE INPUT SIGNALS
VIDEO IC0303-4
NO
C0353
OK
VIDEO IC0303-10
NO
VIDEO COLLECTOR OF Q0305
NO
IC0303
OK
OK
VIDEO EMITTER OF Q0304
NO
Q0304 FL0302
OK
C426 R407
VIDEO IC0302-24
NO
IC0302
OK
VIDEO'IN JACK
NO
VIDEO IN
VIDEO IC0303-28, 29
NO
IC0303
OK
OK
R0359 C0368
TUNER VIDEO EMITTER OF Q403
NO
SEE "TUNER MISSSING IN E-E MODE"

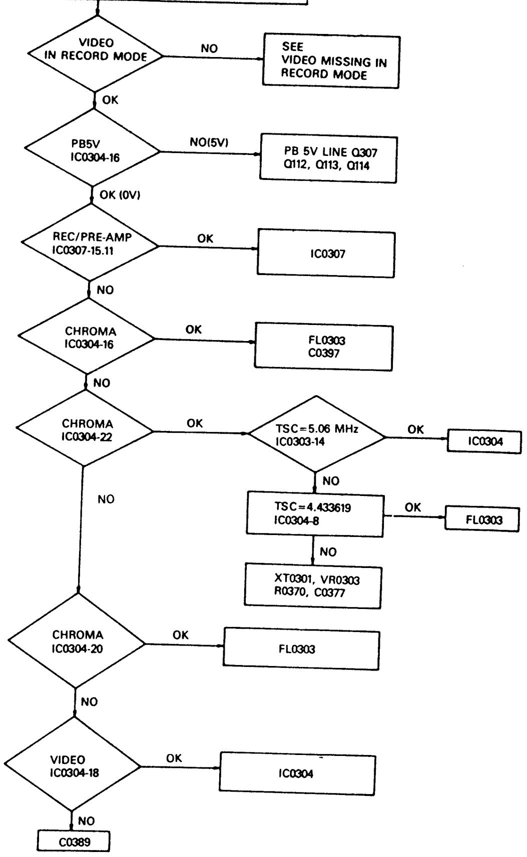

VIDEO MISSING IN RECORD MODE
VIDEO IN EE MODE IC0502-5
SEE "VIDEO MISSING IN EE MODE"
PLACE VCR IN RECORD MODE
REC/PRE-AMP IC0307-3.5
OK
VIDEO HEAD D0306, D0307
NO
REC/PRE-AMP IC0307-11.15
OK
IC0306
NO
FM-VIDEO IC0303-21
OK
FM-VIDEO EMITTER OF Q0306
OK
C3114 C3113 R0392 R0396
NO
L0315 R0348 C0399
NO
FM-VIDEO IC0303-16
OK
FM-VIDEO IC0302-18
OK
R0345 VR0305
NO
R0346 VR0304
NO
VIDEO IC0303-12
OK
PB5V IC0302-13
OK (Lo)
VR0306 VR0307
NO (HI)
Q114 Q113 Q112 Q0303
NO
B


B
VIDEO IC0302-15
OK
IC0302-15 LINK
NO
VIDEO IC0302-3
OK
PB5V IC0302-4
OK (Lo)
IC0302
NO (HIGH)
Q112 Q113 Q114
NO
VIDEO EMITTER OF Q0304
OK
C0321
NO
SEE "VIDEO MISSING IN EE MODE

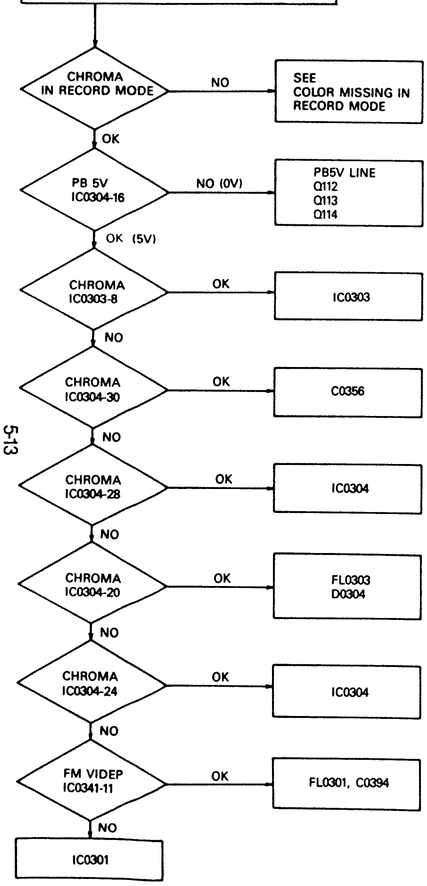

VIDEO MISSING IN PLAY MODE
VIDEO IN RECORD MODE
SEE "VIDEO MISSING IN EE MODE
PLACE VCR IN PLAY MODE
PB 5V IC0301-10 IC0302-14 IC0303-13 IC0307-7
NO (0V)
Q112 Q113 Q114
OK (5V)
VIDEO IC0303-6
OK
IC0303
NO
VIDEO IC0302-1
OK
C0355 R0341
NO
VIDEO IC0302-5
OK
IC0302
NO
VIDEO IC-0302-6
OK
R0308 R0307 C0306
NO
VIDEO IC0302-13
OK
IC0301
NO
VIDEO BASE OF Q0303
OK
Q0303, R0323, R0321, C0339
NO
C CONTINUE


C
VIDEO IC0303-1
OK
Q0304, Q0305 FL0302
NO
FM-VIDEO IC0303-17,19
OK
IC0303
NO
VIDEO IC0301-16
OK
R0311, L0313, C0317 R0310, C0315, C0318
NO
FM-VIDEO IC0301-2
OK
IC0301
NO
FM-VIDEO IC0301-12
OK
C0314, R0372
NO
FM-VIDEO IC0301-11
OK
C0393, L0309 C03113 L0387 C0382
NO
FM-VIDEO IC0301-9
OK
IC0301
NO
PRE-AMP IC0307-10
OK
R0371, C0307
NO
PRE-AMP IC0307-2.6
OK
IC0307
NO
VIDEO HEAD C3107, C3108

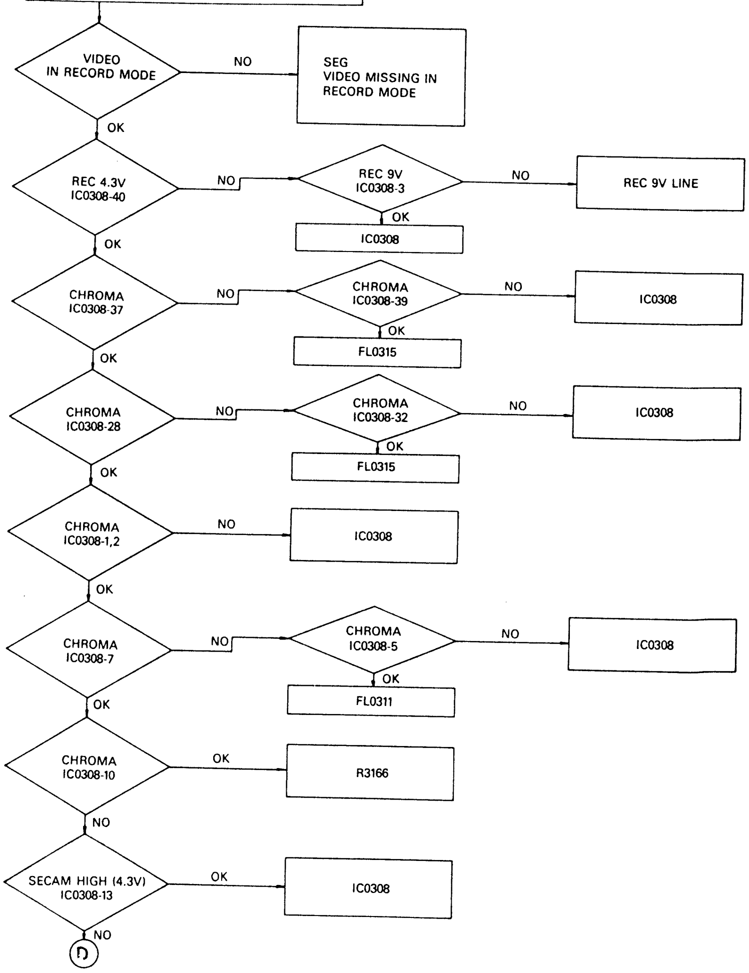
PAL COLOR MISSING IN RECORD MODE

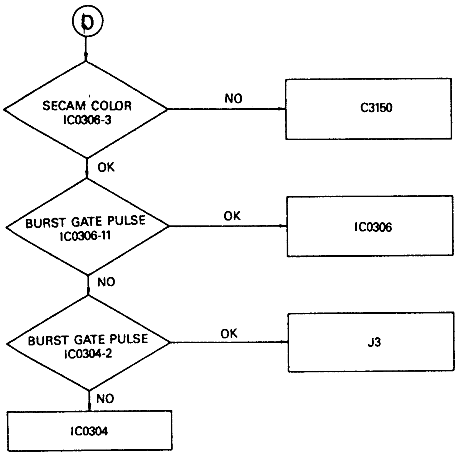

VIDEO IN RECORD MODE
NO
SEE VIDEO MISSING IN RECORD MODE
OK
PB5V IC0304-16
NO(5V)
PB 5V LINE Q307 Q112, Q113, Q114
OK (0V)
REC/PRE-AMP IC0307-15.11
OK
IC0307
NO
CHROMA IC0304-16
OK
FL0303 C0397
NO
CHROMA IC0304-22
OK
TSC=5.06 MHz IC0303-14
OK
IC0304
NO
TSC=4.433619 IC0304-8
OK
FL0303
NO
XT0301, VR0303 R0370, C0377
NO
CHROMA IC0304-20
OK
FL0303
NO
VIDEO IC0304-18
OK
IC0304
NO
C0389

PAL COLOR MISSING IN RECORD MODE

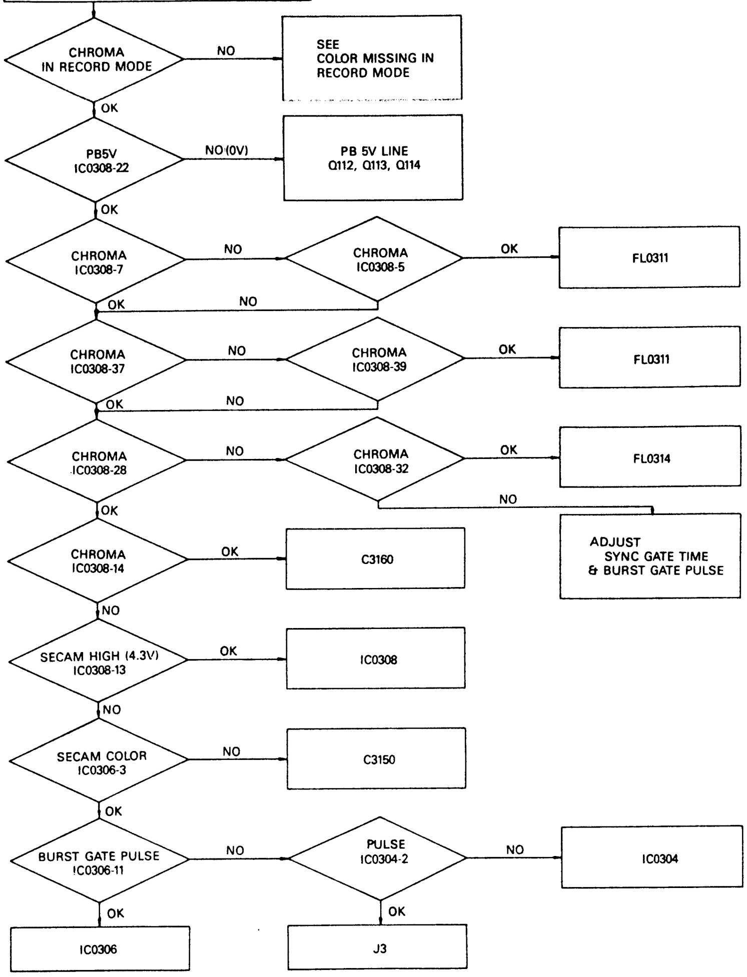

CHROMA IN RECORD MODE
NO
SEE COLOR MISSING IN RECORD MODE
OK
PB 5V IC0304-16
NO (0V)
PB5V LINE Q112 Q113 Q114
OK (5V)
CHROMA IC0303-8
OK
IC0303
NO
CHROMA IC0304-30
OK
C0356
NO
CHROMA IC0304-28
OK
IC0304
NO
CHROMA IC0304-20
OK
FL0303 D0304
NO
CHROMA IC0304-24
OK
IC0304
NO
FM VIDEP IC0341-11
OK
FL0301, C0394
NO
IC0301

SECAM COLOR MISSING IN RECORD MODE

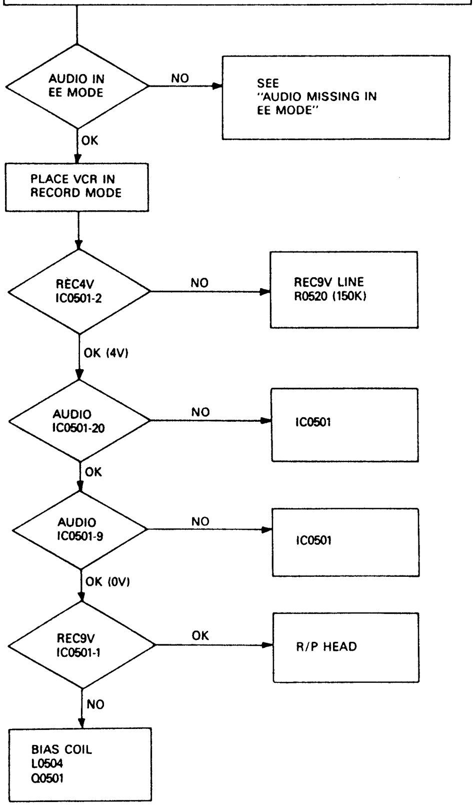

VIDEO IN RECORD MODE
NO
SEG VIDEO MISSING IN RECORD MODE
OK
REC 4.3V IC0308-40
NO
REC 9V IC0308-3
NO
REC 9V LINE
OK
IC0308
OK
CHROMA IC0308-37
NO
CHROMA IC0308-39
NO
IC0308
OK
FL0315
OK
CHROMA IC0308-28
NO
CHROMA IC0308-32
NO
IC0308
OK
FL0315
OK
CHROMA IC0308-1,2
NO
IC0308
OK
CHROMA IC0308-7
NO
CHROMA IC0308-5
NO
IC0308
OK
FL0311
OK
CHROMA IC0308-10
OK
R3166
NO
SECAM HIGH (4.3V) IC0308-13
OK
IC0308
NO
D


D
SECAM COLOR
IC0306-3
NO
C3150
OK
BURST GATE PULSE
IC0306-11
OK
IC0306
NO
BURST GATE PULSE
IC0304-2
OK
J3
NO
IC0304

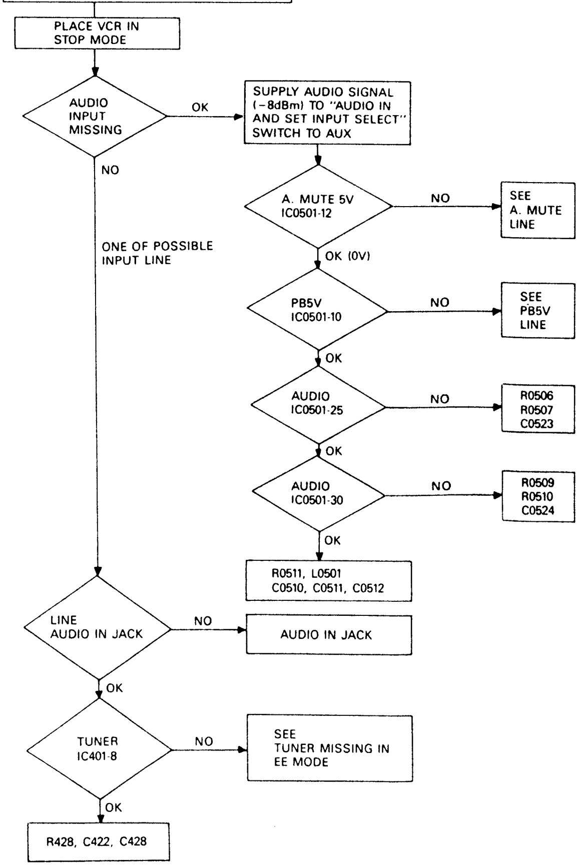
SECAM COLOR MISSING IN PLAY MODE

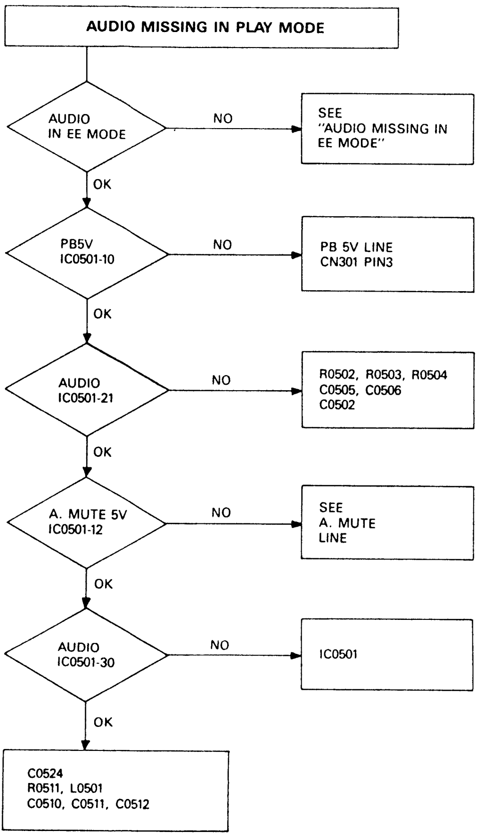

CHROMA
IN RECORD MODE
NO
SEE
COLOR MISSING IN
RECORD MODE
OK
PB5V
IC0308-22
NO (0V)
PB 5V LINE
Q112, Q113, Q114
OK
CHROMA
IC0308-7
NO
CHROMA
IC0308-5
OK
FL0311
OK
NO
CHROMA
IC0308-37
NO
CHROMA
IC0308-39
OK
FL0311
OK
NO
CHROMA
IC0308-28
NO
CHROMA
IC0308-32
OK
FL0314
NO
ADJUST
SYNC GATE TIME
& BURST GATE PULSE
OK
CHROMA
IC0308-14
OK
C3160
NO
SECAM HIGH (4.3V)
IC0308-13
OK
IC0308
NO
SECAM COLOR
IC0306-3
NO
C3150
OK
BURST GATE PULSE
IC0306-11
NO
PULSE
IC0304-2
NO
IC0304
OK
IC0306
OK
J3

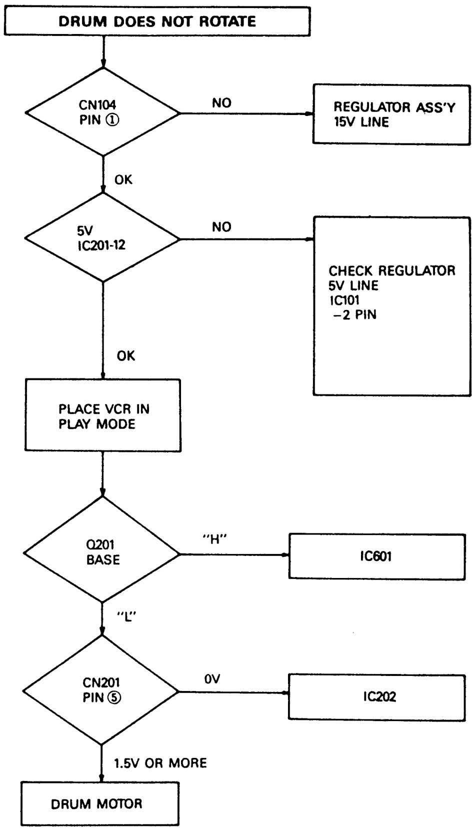
AUDIO MISSING IN RECORD MODE

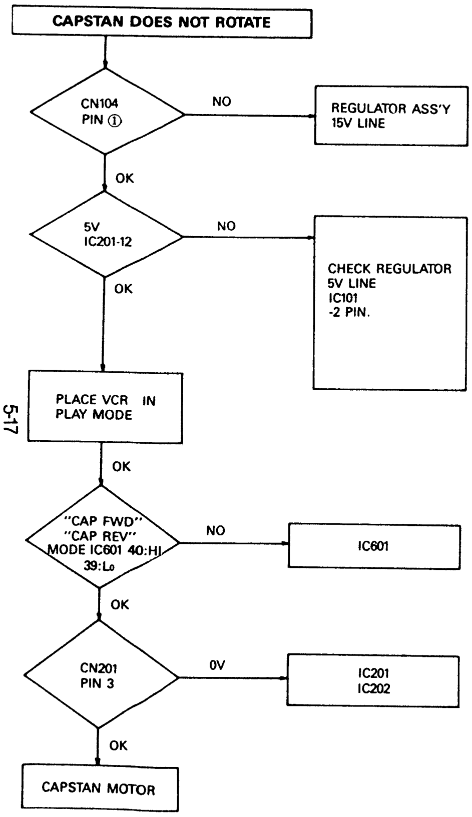

AUDIO IN
EE MODE
NO
SEE
"AUDIO MISSING IN
EE MODE"
OK
PLACE VCR IN
RECORD MODE
REC4V
IC0501-2
NO
REC9V LINE
R0520 (150K)
OK (4V)
AUDIO
IC0501-20
NO
IC0501
OK
AUDIO
IC0501-9
NO
IC0501
OK (0V)
REC9V
IC0501-1
OK
R/P HEAD
NO
BIAS COIL
L0504
Q0501

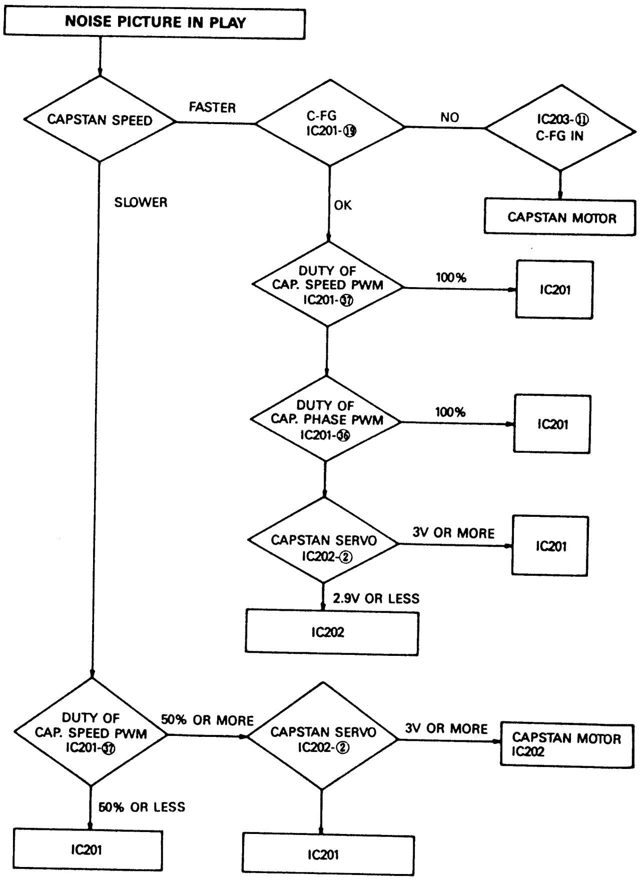
AUDIO MISSING IN EE MODE

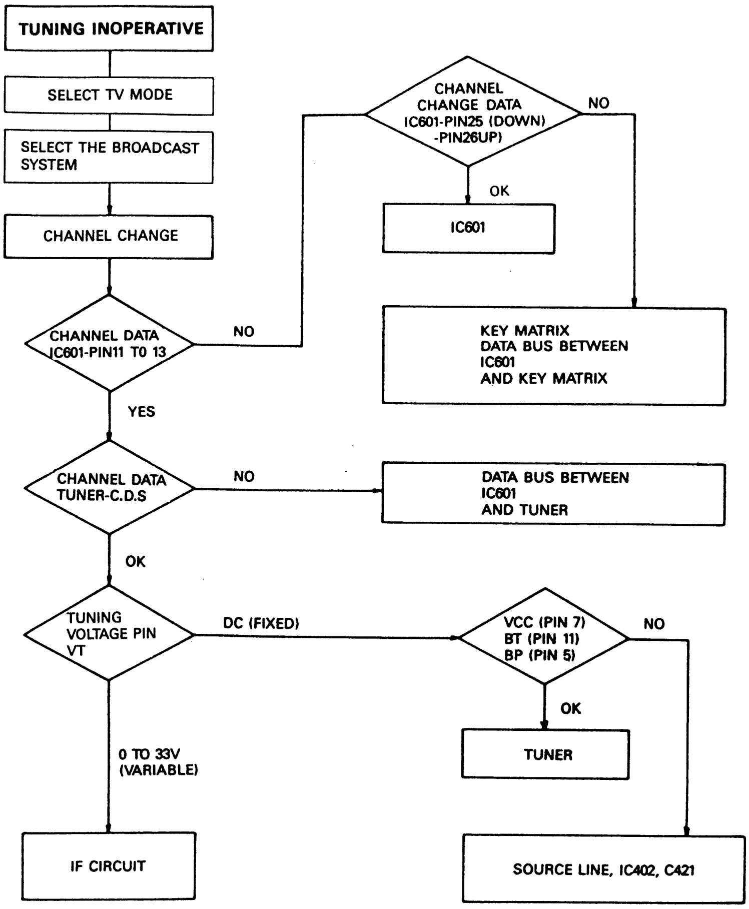

PLACE VCR IN
STOP MODE
AUDIO
INPUT
MISSING
OK
SUPPLY AUDIO SIGNAL
(-8dBm) TO "AUDIO IN
AND SET INPUT SELECT"
SWITCH TO AUX
NO
ONE OF POSSIBLE
INPUT LINE
A. MUTE 5V
IC0501-12
NO
SEE
A. MUTE
LINE
OK (0V)
PB5V
IC0501-10
NO
SEE
PB5V
LINE
OK
AUDIO
IC0501-25
NO
R0506
R0507
C0523
OK
AUDIO
IC0501-30
NO
R0509
R0510
C0524
OK
R0511, L0501
C0510, C0511, C0512
LINE
AUDIO IN JACK
NO
AUDIO IN JACK
OK
TUNER
IC401-8
NO
SEE
TUNER MISSING IN
EE MODE
OK
R428, C422, C428


AUDIO MISSING IN PLAY MODE
AUDIO IN EE MODE
NO
SEE "AUDIO MISSING IN EE MODE"
OK
PB5V IC0501-10
NO
PB 5V LINE CN301 PIN3
OK
AUDIO IC0501-21
NO
R0502, R0503, R0504 C0505, C0506 C0502
OK
A. MUTE 5V IC0501-12
NO
SEE A. MUTE LINE
OK
AUDIO IC0501-30
NO
IC0501
OK
C0524 R0511, L0501 C0510, C0511, C0512


DRUM DOES NOT ROTATE
CN104 PIN ①
NO
REGULATOR ASS'Y 15V LINE
OK
5V IC201-12
NO
CHECK REGULATOR 5V LINE IC101 –2 PIN
OK
PLACE VCR IN PLAY MODE
Q201 BASE
"H"
IC601
"L"
CN201 PIN ⑤
0V
IC202
1.5V OR MORE
DRUM MOTOR


CAPSTAN DOES NOT ROTATE
CN104 PIN ①
NO
REGULATOR ASS'Y 15V LINE
OK
5V IC201-12
NO
CHECK REGULATOR 5V LINE IC101 -2 PIN.
OK
PLACE VCR IN PLAY MODE
OK
"CAP FWD" "CAP REV" MODE IC601 40:HI 39:Lo
NO
IC601
OK
CN201 PIN 3
0V
IC201 IC202
OK
CAPSTAN MOTOR


NOISE PICTURE IN PLAY
CAPSTAN SPEED
FASTER
C-FG IC201-⑲
NO
IC203-⑪ C-FG IN
CAPSTAN MOTOR
OK
SLOWER
DUTY OF CAP. SPEED PWM IC201-㊲
100%
IC201
DUTY OF CAP. PHASE PWM IC201-㊱
100%
IC201
CAPSTAN SERVO IC202-②
3V OR MORE
IC201
2.9V OR LESS
IC202
DUTY OF CAP. SPEED PWM IC201-㊲
50% OR MORE
CAPSTAN SERVO IC202-②
3V OR MORE
CAPSTAN MOTOR IC202
50% OR LESS
IC201
IC201


TUNING INOPERATIVE
SELECT TV MODE
SELECT THE BROADCAST SYSTEM
CHANNEL CHANGE
CHANNEL DATA IC601-PIN11 TO 13
NO
CHANNEL CHANGE DATA IC601-PIN25 (DOWN) -PIN26UP)
NO
OK
IC601
KEY MATRIX DATA BUS BETWEEN IC601 AND KEY MATRIX
YES
CHANNEL DATA TUNER-C.D.S
NO
DATA BUS BETWEEN IC601 AND TUNER
OK
TUNING VOLTAGE PIN VT
DC (FIXED)
VCC (PIN 7) BT (PIN 11) BP (PIN 5)
NO
OK
TUNER
0 TO 33V (VARIABLE)
IF CIRCUIT
SOURCE LINE, IC402, C421

6. REPLACEMENT PARTS LIST

MECHANICAL REPLACEMENT PARTS LIST

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
		TRANSPORT MECHANISM ASSEMBLY	
201	66120-600-050	MECHA CHASSIS ASSY;SECC+SUM	S.N.A
206	65234-600-420	REEL DISK(R) ASSY;POM+SUS	
207	65234-600-520	REEL DISK(S) ASSY;POM+SUS	
208	66604-609-110	HOLDER TENSION S/P;SECCE 20/20	
209	66674-611-310	SPRING ARM TENSION;SUS304-WPB	
210	65254-608-410	ARM TENSION ASSY;SECC+SUS304	
211	65274-600-610	TENSION BAND ASSY;FELT+PBSP	
212	69000-270-014	ASSY POLE BASE L ; G-7	
213	66653-600-011	BASE POLE(L)ASSY;ZDC12+SUS	
214	65223-700-330	GUIDE ROLLER ASSY;SUS303+POM	
215	69000-270-013	ASSY POLE BASE R ; G-7	
216	66653-600-111	BASE POLE(R)ASSY;ZDC12+SUS	
218	67224-602-010	NUT-NYLON;M3X0.5 FE FZY	
219	66674-611-810	SPRING REVIEW ARM:SUS304-WPB	
220	69000-270-072	ASSY HOLDER LED;D7-NL2A	
221	62309-112-020	LED IR;LN59	
222	66604-609-210	HOLDER LED;ABS	
224	67224-602-210	CAM ADJUST:ALLOY 5	
225	66674-611-510	SPRING TORSION A/C;SUS304-WPB	
228	69000-270-033	A/C HEAD ASSY ; G-7	
229	69000-270-114	A/C HEAD ASSY;D7-PR1	
230	66614-611-510	HOLDER A/C HEAD;SECC	
231	66674-710-910	SPRING A/C HEAD;SUS WPA	
232	67094-701-410	SCREW-A/C HEAD;SUM32 PI5	
233	69000-270-061	ASSY-F/E HEAD;D7-NR2	
236	66674-611-210	SPRING F/E HEAD;SUS304-WPB	
237	66654-605-010	BUSH ROLLER SUPPLY;C3602BD	S.N.A
238	65164-700-420	FLANGEUPPER:SUS 316 CSP	S.N.A
239	65224-703-220	ROLLER SUPPLY;POM	
240	65224-703-510	INNER-SUPPLY;C3604BD	
241	67208-213-001	NUT-HEX;2-M3X0.5 FE FZY	
242	66114-600-310	BRKT-JOINT PCB;SPG T 1.2	S.N.A
246	65264-601-120	PINCH ROLLER ASSY;TCR-65	
247	65253-609-120	PINCH ROLLER ARM ASSY;SECC+SUM	
248	66674-611-720	SPRING PINCH ARM;SUS 304-WPB	
249	65254-608-520	BRAKE MAIN(R) ASSY;DURANEX+SUS 420J2	
250	65254-608-620	BRAKE MAIN(L) ASSY;DURANEX+SUS 420J2	
251	66674-611-910	SPRING MAIN BRAKE:SUS304-WPB	
252	65254-608-720	BRAKE SUB(R) ASSY;DURANEX+SUS 420J2	
254	65254-608-810	BRAKE SUB(L) ASSY:DURNEX+SUS420J2	
255	66674-612-110	SPRING SUB BRAKE(L);SUS304-WPB	
264	66604-623-310	HEAT SINK A:A20179	
265	66604-623-420	HEAT SINK B;A20179 FLAT	
278	69000-270-029	ASSY JOINT BOARD ; G-7	
403	66604-624-920	HOLDER TR ASSY;A20179+SUS304	
404	64769-052-210	MOTOR DRUM;VDB1215EL	
404	69000-370-023	ASSY PCB TERMINAL;R7PR1A-HC	
420	66154-600-320	COVER UPPER DRUM:A1050P T0.5	
450	69017-123-310	DRUM ASSY;D7-PR1A-HC	
451	69000-370-028	ASSY BASE DRUM;G-7	
452	69000-370-026	ASSY LOWER DRUM;R7 PR1A-HC	
453	69000-370-024	ASSY UPPER DRUM;R7 PR1A-HC	
454	69000-270-101	ASSY PRE AMP	
901	67004-100-810	SCREW-PH;+M2.6X4 FE FZY	
902-1	67004-100-710	SCREW-PH;+M3X4 FE FZY	
903	67098-130-054	SCREW-PH:+M3X8 FE FZY -C	
904	67068-820-033	SET SCREW;M2X3 FE FZB	
906	67008-130-061	SCREW-PH:+M3X6 FE FZY	
907	67004-100-710	SCREW-PH;+M3X4 FE FZY	
907-1	67009-130-051	SCREW-PH:+M3X5 FE FZY	
909	66674-608-130	GROUND PLATE TOP:SUS 430 T0.25	
911	67008-130-051	SCREW-PH:+M3X5 FE FZY WL	
912	67008-123-181	SCREW-PH;+M2.3X18 FE FZY	
913	67008-126-081	SCREW-PH:+M2.6X8 FE FZY	
914	67004-100-410	SCREW-PH;+M3X8 FE FZY WL/P	
917	67094-700-620	SCREW-BH:+M3X7.5 BSW3 WP NI	
918	67094-700-710	SCREW-PWH:+M3X6 FE FZY	
923	67094-700-720	SCREW-PWH;2-3X8 FE FZY	
924	67094-700-720	SCREW-PWH;2-3X8 FE FZY	
951	67304-600-010	WASHER-PLAIN:SPG	
953	67304-103-430	WASHER-PLAIN;3.2X6X0.13 POLY SLIDE	
956	66864-600-410	WASHER-DUST:6X0.5 POLY AMID	
957	67334-600-310	SLIT WASHER;PI2.5XPI5.2XT0.5	
958	67334-600-410	SLIT WASHER;PI3.2XPI6XT0.5	
971	67358-103-006	RING-E;PI3 STSC304-CSP	
267	64769-052-025	MOTOR CAPSTAN;VCM 4730BL	
268	65124-600-011	CAPSTAN HOLDER ASSY;PC 30% GF	
269	65224-602-130	CAP FLYWHEEL ASSY;ZDC2+SUS	
270	66614-607-810	BRKT CAP FLYWHEEL:SECCE 20/20	
271	65274-600-811	CAPSTAN BELT;DC-66	
272	65274-600-711	IDLER BELT;CY-65	
273	65253-602-010	PLATE MAIN SLIDE;SECCE 20/20	
274	65253-602-110	I.B SLIDE ASSY;SECC+SUM+SUS	
275	66834-602-510	SLIDE STOPPER;CY-65	
276	66674-613-110	SPRING I.B SLIDE;SUS304-WPB	
277	65293-600-100	LOADING MOTOR ASSY;G-7(N.A)	
280	66824-600-610	TIE BAND;NYLON 616.100	
281	69000-270-073	ASSY PHOTO INTERRUPTER;D7-NL2A	
401	66604-626-210	HEAD BRUSH ASSY;B.B+DEMPER+P.B	
520	66674-608-110	GROUND TOP PLATE;PB SP T 0.15	
902	67004-101-414	SCREW-BH;M3X4 FE FZY	
902-1	67004-100-710	SCREW-PH;+M3X4 FE FZY	
905	67004-101-413	SCREW-PH;+M3X3 FE FZY	
906	67008-130-061	SCREW-PH;+M3X6 FE FZY	
907	67004-100-710	SCREW-PH;+M3X4 FE FZY	
908	67009-130-051	SCREW-PH;+M3X5 FE FZY	
918	67094-700-710	SCREW-PWH;+M3X6 FE FZY	
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER	
953	67304-103-430	WASHER-PLAIN;3.2X6X0.13 POLY SLIDE	
955	67304-700-610	WASHER PLAIN;4.2X8X0.5 POLY SLIDE	
956-1	66864-600-410	WASHER-DUST;6X0.5 POLY AMID	
972	67358-104-006	RING-E;PI4 SUS304-CSP	
973	67358-102-506	RING-E;PI2.5 STSC304-CSP	
Q005	62309-110-243	PHOTO-INTERRUPTER;NJL5141EA	
		BOTTOM SIDE MECHANISM	
201	66120-600-050	MECHA CHASSIS ASSY;SECC+SUM	S.N.A
202	66114-600-010	BRKT A:SECCE 20/20	
203	66114-600-110	BRKT B;SECCE 20/20	
204	66114-611-210	BRACKET D;SPG T1.6	
256	69000-270-022	ASSY GEAR LOADING L ; G-7	
260	69000-270-023	ASSY GEAR LOADING R ; G-7	
263	65153-600-011	IDLER CLUTCH ASSY;960550(G-7)	
266	66614-607-920	HOLDER CAP MOTOR;SECC 20/20	
		HOUSING ASSEMBLY	
501	66122 700 492	HOUSING ASSEMBLY	
	69000 470 010	ASSY HOUSING CHASSIS;F/L SYSTEM(G-7)	S.N.A
503	66022 600 320	SIDE CHASSIS(R);ABS G20	
504	66022 600 420	SIDE CHASSIS(L);ABS G20	
505	66463 601 210	CASSETTE-GUIDE;ABS (BLK)	
506	65104 612 010	RELAY SHAFT;SUM-2	
507	65204 603 010	RELAY GUIDE(R);CURACON (M90-44)	
508	65204 603 110	RELAY GUIDE(L);CURACON (M90-44)	
509	65254 609 510	MASK CAM LEVER;CURACON (M90-44)	
510	69000 470 020	ASSY CASSETTE HOLDER;F/L SYSTEM(G7)	
511	66132 600 110	CASSETTE HOLDER;SECC-E20/20 T1.2	S.N.A
512	66054 604 310	KEY-CASSETTE;DUDRACON+SUS 304 T0.5	S.N.A
513	66674 612 610	CASSETTE HOLDER SPR;SVS 304 T0.15	S.N.A
514	66132 600 110	HOLDER SHAFT(R);SUM-2(H)	S.N.A
515	66132 600 210	HOLDER SHAFT(L);SUM-2(H)	S.N.A
516	66132 600 310	GUIDE PIN(R);SUM-2(H)	S.N.A
517	66132 600 410	GUIDE PIN(L);SUM-2(H)	S.N.A
518	66132 600 510	VERTICAL GUIDE PIN;SUM-2(H)	S.N.A
519	66152 600 110	UPPER CHASSIS;SEC-E 20/20 1.0	
520	66674 608 110	GROUND-PLATE TOP;PBSP T0.15	
521	65202 600 220	SIDE ARM(R);DURACON(M90-44)	
522	66674 616 410	ARM TORSION SPRING R;SWP-B P1.0	
523	65202 600 320	SIDE ARM(L);DURACON(M90-44)	
524	66674 616 310	ARM TORSION SPRING L;SWP-B P1.0	
525	65203 600 720	ARM GEAR:NYLON 66(CM300)	
526	66664 605 510	ARM GEAR PIN;SUS 420 J2-8	S.N.A
527	66674 616 610	EJECT SPRING;SWP-B	
528	65203 600 810	SIDE BEBEL GEAR;DURACON(M90-44)	
529	65203 600 620	TIMING GEAR;DURACON(M90-44)	
530	66153 600 610	GEAR HOLDER PLATE;SECC-E20/20 T1.0	
531	66463 601 310	LID OPENER;DURACON(M90-44)	
532	66674 616 510	LID OPENER SPRING;SWP-B P10.5	
534	66674 602 810	MASK-SPRING;SUS 304	
535	63569 700 210	REC SAFETY-S/W;MSW-1465 NBKU	
536	63054 220 400	LEAD WIRE;1429 #26 GRAY 365	
537	63054 220 401	LEAD WIRE;1429 #26 GLUE 183	
538	63569 700 310	CASSETTE-S/W;MSM-1429CA	
539	63054 220 420	LEAD WIRE;1429 #26 BROWN 195	
540	63054 220 430	LEAD WIRE;1420 #26 BLACK 180	
541	63005 005 033	PWB-SENSOR(E);94V0 1.6TX21.5X25(G07)	S.N.A
542	63054 220 440	LEAD WIRE;1429 #26 BLUE 288	
543	63054 220 450	LEAD WIRE;1429 #26 RED 280	
544	63054 220 460	LEAD WIRE;1429 #26 ORANGE 285	
545	63005 005 032	PWB-SENSOR(S);94V0 1.6TX45X35(G-7)	S.N.A
546	63054 220 530	WIRE GROUND;1007#16 75 BLACK	S.N.A
Q001	62139 701 020	TRANSISTOR;KSR2001	
Q002	62139 701 020	TRANSISTOR;KSR2001	
Q003	62139 401 055	TR-PHOTO;PN202S(R)	
Q004	62139 401 055	TR-PHOTO;PN202S(R)	
910	67108 600 010	SCREW TAP BH;2S-M3*5 FE FZY	
909	67154 101 310	SCREW TAP PWH;1S-M3*8 FE FZY	
CN206	63053 612 615	LEAD CON.ASS'Y;1429 #26 RED150 CN206	

*S.N.A :SERVICE NOT AVAILABLE.

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
		INSTRUMENT ASSEMBLY	
1-1	69000-173-167	ASSY PANEL FRONT;VQ-720	
1-2	69000-173-202	ASSY PANEL FRONT;VQ-721	
109	66664-605-110	HINGE MAIN B;PAL(G-7W)	S.N.A
122	69098-600-735	REGULATOR ASSY(N);PAL G-7 220V/5.1V	
123	66614-615-100	BRKT HEAT SINK;ALT2.0	S.N.A
130	66020-600-860	FRAME;HIPS 94V0	S.N.A
131	66612-600-610	BOTTOM COVER;SPG T0.5(G-7W)	
132	63104-600-110	GROUND CAP;SPG T0.5 (G-7W)	S.N.A
133	66074-600-110	LEG;CRM40-70 860-30(BLK)	
134	66462-603-710	CONNECTOR BOARD;ABS 94V0	
135	63344-010-050	HOLDER JACK;HX0620-01-010	
136	69702-603-220	ASSY-MAIN B;G-7 PAL SECAM	
137	69757-603-661	ASSY-MAIN A;G-7 PAL B/G , D/K	
141	63104-600-220	GROUND SPRING;SUS304(G-7W) T0.3	S.N.A
142	66634-601-210	CLAMPER WIRE;NYLON BLK	S.N.A
143	66614-714-310	BRKT-GUIDE TOP S;SPG T1.0	
144	66614-611-710	BRKT-PREAMP;SPTE T0.8(PAL G-7W)	
146	64543-603-410	SHIELD CASE TOP	S.N.A
147	64544-610-610	SHIELD CASE BOTTOM	S.N.A
148	74543-603-110	SHIELD CASE BODY	S.N.A
151-1	69771-603-215	ASSY-TIMER;VQ-720	
151-2	69771-603-580	ASSY-TIMER;VQ-721	
152-1	69780-603-203	ASSY-FUNCTION;VQ-720	
152-2	69770-603-670	ASSY-FUNCTION;VQ-721	
163	66002-601-110	TOP-CABINET;HISH T0.8 BLK(G-7W)	
181	67158-230-081	SCREW-TAP TITE BH;3*8 FE FZY	
182	67154-101-440	SCREW-TAP PWH;2-3*10 FE FZY	
190	67158-240-121	SCREW-BH;2-4*12 FE FZY	
191	67094-740-121	SCREW-TAP PWH;2-4*12 FE FZY	
193	67158-240-103	SCREW-TAP BH;2S-4*10 FE FZY	
200	69017-150-310	FULL DECK ASSY;D7-PR1	
278	69000-270-029	ASSY JOINT BOARD;G-7	
450	69017-123-310	DRUM ASSY;D7PR1A-HC	
454	69000-270-101	ASSY-PRE AMP;D7-PR1	
50-1	67643-602-350	DOOR-FRONT;VQ-720	
50-2	67643-602-720	DOOR FRONT;VQ-721	
501	66122-700-492	HOUSING ASSY;F/L SYSTEM	
533	67642-602-342	FRONT MASK;ACRYL VQ721	
533	66674-602-315	FRONT MASK: VR-4000/TEN	
1-1	69000-173-219	ASSY PANEL FRONT : VR-4000	
50-1	67643-602-322	DOOR FRONT ; VR-4000	
		REMOCON ASSY;PR/427(W/L)	
	69099-605-100	REMOCON ASSY;PR/427(W/L)	
	61048-177-109	R-METAL FILM;RM 1/8TS 1-J	
	61409-101-360	C-CERAMIC.TEMP;CC45 SL 50V 100-J	
	61409-101-360	C-CERAMIC.TEMP;CC45 SL 50V 100-J	
	61602-121-470	C-ELECTROLYTIC;CE04W 10V 47UF(RSS)	
	62119-101-581	IC;TC9012F	
	62149-301-431	TRANSISTOR;KSC1008-Y SAMSUNG	
	62309-112-030	LED-IR;EL-1L1	
	63005-006-479	PWB-REMOCON;PR427(S1)	
	64539-102-311	CERAMIC RESONATOR;CSB 455 EBL	
	66151-600-310	COVER TOP REMOCON;ABS 94HB(PR427)	
	66152-600-620	COVER BOTTOM REM;ABS 94HB(NR112)	
	66673-600-510	SPRING (B) REMOCON;SUS 304 T0.4	
	66674-611-010	SPRING(A) REMOCON;PBR2-1/4H	
	67613-607-810	INLAY COVER REM;PVC T0.5(PR427)	
	67644-600-120	DOOR BATTERY;ABS 94HB(NR112)	
	67654-607-920	WINDOW REMOCON;ACRYL/NR110	
	67872-600-310	KEY-REMOCON;SILICON RU(PR427)	
	68623-604-030	BOX-REMOCON;ART PAPER(NR112)	
	69098-600-735	REGULATOR ASSY(N);PAL G-7 220V/50HZ 5.1V	
	60659-431-574	AC IN COVER;PET T1.0	
	60849-100-100	BELT;FREE UP BELT	
	66614-615-101	BRKT-HEAT SINK;AL T2.0	
	63354-600-020	CONNECTOR ASSY;G-7 PAL	
	60659-431-575	COVER CAPACITOR;PET T1.0	
	64709-084-773	FUSE CLIP;RBP 4-1 1/2H SV9500	
	64709-084-773	FUSE CLIP;RBP 4-1 1/2H SV9500	
	60659-431-576	FUSE COVER;PET T1.0	
	63054-220-470	GND WIRE;11/0.16 330V 180AY	
	63054-801-150	POWER CORD;AC NON-UL STOPPER CP-2	
	62869-190-222	POWER-TRANS;EI 160X30 220V(5.1)	
	63005-006-443	PWB;XPC-FR-2(G-7) PAL NEW	
	67154-600-650	SCREW TAP;RH 2S 4X8 CUT ZN-Y	
	60659-431-573	TAP STUE;SPC T0.5	
C101	61409-601-320	CAPACITOR(C.A);ECK-DNS 472ME	
C102	61609-144-332	C-ELECTROLYTIC;35V 3300M(CASE VENT)	
C103	61609-141-475	C-ELECTROLYTIC;CE04W 16V 4700M	
C104	61609-141-350	C-ELECTROLYTIC;CE04W 35V 1000M	
C105	61609-124-471	C-ELECTROLYTIC;100V 47M	
C106	61609-124-473	C-ELECTROLYTIC;CE04W 50V 47M	
C107	61609-124-473	C-ELECTROLYTIC;CE04W 50V 47M	
C108	61609-402-060	C-ELECTROLYTIC;CE04W 35V 10M	
C109	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C110	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C111	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C113	61607-401-479	C-CLECTROLYTIC;CE04W TAPG 16V 47M	
C114	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C115	61607-401-479	C-CLECTROLYTIC;CE04W TAPG 16V 47M	
C116	61607-122-471	C-ELECTROLYTIC;CE04W TAPG 25V 47M	
C117	61609-124-473	C-ELECTROLYTIC;CE04W 50V 47M	
CN101	63349-062-410	CONNECTOR-WAFER;5267-12A	
D101	62169-403-850	DIODE(B.D);RBV 402(SAN KEN)	
D102	62169-201-060	DIODE;1N4002	
D103	62169-406-482	DIODE;1N4148 SAMSUNG	
D104	62169-201-060	DIODE;1N4002	
F101	64709-084-772	FUSE;5X20 T500MA 250V	
F102	64709-084-771	FUSE;5X20 T2.5A 250V	
F103	64709-084-812	FUSE;5X20 T800MA 250V	
FR101	61099-605-120	FUSIBLE RESISTOR;FR 1/2 1.2-J	
FR102	61099-605-220	R-FUSIBLE;1/4W 22N-J	
IC101	62119-101-430	I.C;STK 5333(KTS)	
IC102	62109-201-282	IC;MC7812(SST)	
LF101	62429-014-115	LINE-FILTER;HL38	
Q101	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q102	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q103	62137-701-012	TRANSISTOR;KSR 1003 TAPG	
R101	61048-227-103	R-METAL FILM;RM 1/4P 10K-J	
R102	61049-427-681	R-MATAL OXIDE;RS1P 680-J	
R103	61049-427-121	R-MATAL OXIDE;RS1P 1.2K-J	
R104	61049-427-681	R-MATAL OXIDE;RS1P 680-J	
R105	61048-327-152	R-MATAL OXIDE;RS 1/2P 1.5K-J	
R106	61048-227-561	R-METAL FILM;RM 1/4P 560-J	
R108	61048-227-272	R-METAL FILM;RM 1/4P 2.7K-J	
R109	61048-227-472	R-METAL FILM;RM 1/4P 4.7K-J	
R110	61048-227-103	R-METAL FILM;RM 1/4P 10K-J	
R112	61048-177-121	R-METAL FILM;RM 1/8TS 120-J	
ZD101	62169-403-860	DIODE(Z.D);EQA02-23A(FUJI)	
ZD102	62169-403-870	DIODE(Z.D);EQA02-07A(FUJI)	
	69000-270-029	ASSY-DECK JOINT;G-7	
C229	61507-121-260	C-POLYESTER;CQ921M TAPG 50V 0.1M-J	
C230	61507-121-260	C-POLYESTER;CQ921M TAPG 50V 0.1M-J	
C231	61507-121-260	C-POLYESTER;CQ921M TAPG 50V 0.1M-J	
C232	61507-121-260	C-POLYESTER;CQ921M TAPG 50V 0.1M-J	
C234	61609-401-680	C-ELECTROLYTIC;CE04W 25V 100M	
CN204	63349-062-590	CONNECTOR-WAFER;5268-10A	S.N.A
CN205	63349-062-620	CONNECTOR WAFER;5268-13A	S.N.A
CN206	63349-062-550	CONNECTOR-WAFER;5268-06A	S.N.A
CN207	63349-062-520	CONNECTOR-WAFER;5268-03A	S.N.A
CN209	63349-062-530	CONNECTOR-WAFER;5268-04A	S.N.A
CN210	63349-062-311	CONNECTOR WAFER;5267-02A(BLK)	S.N.A
CN211	63349-062-310	CONNECTOR-WAFER;5267-02A	S.N.A
CN212	63349-062-511	CONNECTOR WAFER;5268-02A(RED)	S.N.A
CN213	63349-062-510	CONNECTOR WAFER;5268-02A	S.N.A
CN214	63349-062-540	CONNECTOR-WAFER;5268-05A	S.N.A
IC205	62119-401-300	IC;KA8301	
IC206	62119-401-300	IC;KA8301	
L201	62429-813-220	COIL-PEAKING;EL0607SK1-220K	
Q204	62139-701-013	TRANSISTOR;KSR 1004	
Q205	62139-103-381	TRANSISTOR;KSA733-Y	
Q208	62139-103-381	TRANSISTOR;KSA733-Y	
Q209	62139-302-741	TRANSISTOR;KSC945-Y	
R241	61048-177-391	R-METAL FILM;RM 1/8TS 390-J	
R242	61048-177-221	R-METAL FILM;RM 1/8TS 220-J	
R243	61049-527-689	R-METAL OXIDE;RS 2P 6.8-J	
R244	61049-429-338	R-METAL OXIDE;RS 2P 3.3J	
R248	61048-177-683	R-METAL FILM;RM 1/8TS 68K-J	
R249	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R250	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R251	61048-177-474	R-METAL FILM;RM 1/8TS 470K-J	
R252	61048-177-224	R-METAL FILM;RM 1/8TS 220K-J	
R253	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J	
Q210	62139-701-013	TRANSISTOR;KSR 1004	
Q212	62139-701-013	TRANSISTOR;KSR 1004	

• S.N.A : Service Not Available

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
152-1	69780-603-203	ASSY-FUNCTION;PAL(G-7) VQ-720.VR-4000	
	63349-083-158	CONNECTOR WAFER;S8B-PH	
SW801	63599-016-073	SWITCH-TACT;KPT-1108A	
SW802	63599-016-073	SWITCH-TACT;KPT-1108A	
SW803	63599-016-073	SWITCH-TACT;KPT-1108A	
SW804	63599-016-073	SWITCH-TACT;KPT-1108A	
SW805	63599-016-073	SWITCH-TACT;KPT-1108A	
SW806	63599-016-073	SWITCH-TACT;KPT-1108A	
SW807	63599-016-073	SWITCH-TACT;KPT-1108A	
SW808	63599-016-073	SWITCH-TACT;KPT-1108A	
SW809	63599-016-073	SWITCH-TACT;KPT-1108A	
SW810	63599-016-073	SWITCH-TACT;KPT-1108A	
152-2	69770-603-670	ASSY-FUNCTION;PAL(G-7) VQ-721	
	63005-006-686	PWB-F/T;1V0 1.6X240X136 VQ721	S.N.A
	67354-701-110	RING POWER;ABS750	
CN801	63053-607-430	LEAD-CONN ASSY:1429 #26 BLK 170CN703	
LD801	62309-110-340	LED;GL-3HD7/GL3HD8	
R801	61048-177-271	R-METAL FILM;RM 1/8TS 270-J	
RM801	64529-310-010	FILTER-CERAMIC;SFE 4.5MB	
SW801	63599-016-073	SWITCH-TACT;KPT-1108A	
SW802	63599-016-073	SWITCH-TACT;KPT-1108A	
SW803	63599-016-073	SWITCH-TACT;KPT-1108A	
SW804	63599-016-073	SWITCH-TACT;KPT-1108A	
SW805	63599-016-073	SWITCH-TACT;KPT-1108A	
SW806	63599-016-073	SWITCH-TACT;KPT-1108A	
SW807	63599-016-073	SWITCH-TACT;KPT-1108A	
SW808	63599-016-073	SWITCH-TACT;KPT-1108A	
SW809	63599-016-073	SWITCH-TACT;KPT-1108A	
SW810	63599-016-073	SWITCH-TACT;KPT-1108A	
SW811	63599-016-073	SWITCH-TACT;KPT-1108A	
SW812	63599-016-073	SWITCH-TACT;KPT-1108A	
	69771-603-215	ASSY-FUN/TIMER;PAL(G-7) VQ-720.VR-4000	
	63104-600-110	GROUND-CAP;PBSS T0.5 G-7C	
	63054-212-350	WIRE GND;1007 #18 270 BLK YY	
	66604-607-510	HOLDER-POWER;ABS 94HB(VT-T39)	
	63005-006-351	PWB-F/T(VX-720);1V1 1.6X186X324	S.N.A
	66603-605-310	HOLDER-TIMER;ABS 94HB(SV-660)	
C701	61419-109-140	C-CERAMIC.HK;CK45 F 50V 0.01M-Z	
C702	61609-401-440	C-ELECTROLYTIC;CE04W 16V 22M	
C703	61609-402-060	C-ELECTROLYTIC;CE04W 35V 10M	
CN701	63053-607-620	LEAD CONN ASSY;1429 #26 WHT 180 CN203	
CN702	63053-607-810	LEAD CONN ASSY;1429 #26 WHT 470 CN702	
CN703	63053-607-790	LEAD CONN ASSY;1429 #26 WHT 130 CN703	
D701	62169-406-482	DIODE;1N4148 SAMSUNG	
D702	62169-406-482	DIODE;1N4148 SAMSUNG	
D703	62169-406-482	DIODE;1N4148 SAMSUNG	
D704	62169-406-482	DIODE;1N4148 SAMSUNG	
D705	62169-406-482	DIODE;1N4148 SAMSUNG	
D706	62169-406-482	DIODE;1N4148 SAMSUNG	
D707	62169-406-482	DIODE;1N4148 SAMSUNG	
D708	62169-406-482	DIODE;1N4148 SAMSUNG	
DQ701	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
DT1	62319-013-044	DIGITRON;6-MT-86GK	
IC701	62109-502-010	IC;MSC 1165RS	
LD701	62309-110-340	LED;GL-3HD7/GL3HD8	
R701	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R702	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R703	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R704	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R705	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R706	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R707	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R708	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R709	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R710	61048-177-271	R-METAL FILM;RM 1/8TS 270-J	
R711	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R712	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
RM701	64529-312-010	REMOCON MODULE;SV-06A	
SW701	63599-016-073	SWITCH-TACT;KPT-1108A	
SW702	63599-016-073	SWITCH-TACT;KPT-1108A	
SW703	63599-016-073	SWITCH-TACT;KPT-1108A	
SW704	63599-016-073	SWITCH-TACT;KPT-1108A	
SW705	63599-016-073	SWITCH-TACT;KPT-1108A	
SW706	63599-016-073	SWITCH-TACT;KPT-1108A	
SW707	63599-016-073	SWITCH-TACT;KPT-1108A	
SW708	63599-016-073	SWITCH-TACT;KPT-1108A	
SW709	63599-016-073	SWITCH-TACT;KPT-1108A	
SW710	63599-016-073	SWITCH-TACT;KPT-1108A	
SW711	63599-016-073	SWITCH-TACT;KPT-1108A	
SW712	63599-016-073	SWITCH-TACT;KPT-1108A	
SW713	63599-016-073	SWITCH-TACT;KPT-1108A	
SW714	63599-016-073	SWITCH-TACT;KPT-1108A	
SW715	63599-016-073	SWITCH-TACT;KPT-1108A	
SW716	63599-016-073	SWITCH-TACT;KPT-1108A	
SW720	63519-073-020	SWITCH-SLIDE;SSS 323	

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
VR701	61203-107-060	VR-ROUND;RK09K1130-500KB	
VR702	61203-107-050	VR-ROUND;RK09K1130-20KB	
VR703	61243-103-020	VR-SEMI;SR 19D-47KB	
	69771-603-580	ASSY-TIMER;G-7W PAL(VQ-721)	
C701	61419-109-140	C-CERAMIC.HK;CK45 F 50V 0.01M-Z	
C702	61609-401-440	C-ELECTROLYTIC;CE04W 16V 22M	
C703	61609-402-060	C-ELECTROLYTIC;CE04W 35V 10M	
CN701	63053-609-880	LEAD CON ASSY;1429 #26 WHT 180 CN701	
CN702	63053-607-660	LEAD CON ASSY;1429 #26 WHT 230 CN701	
CN703	63349-062-620	CONNECTOR WAFER;5268-13A	
D701	62169-406-482	DIODE;1N4148 SAMSUNG	
D702	62169-406-482	DIODE;1N4148 SAMSUNG	
D703	62169-406-482	DIODE;1N4148 SAMSUNG	
D704	62169-406-482	DIODE;1N4148 SAMSUNG	
D705	62169-406-482	DIODE;1N4148 SAMSUNG	
D706	62169-406-482	DIODE;1N4148 SAMSUNG	
D707	62169-406-482	DIODE;1N4148 SAMSUNG	
D708	62169-406-482	DIODE;1N4148 SAMSUNG	
DQ701	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
IC701	62109-502-010	IC;MSC 1165RS	
R700	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R701	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R702	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R703	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R704	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R706	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R706	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R707	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R708	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R709	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R711	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R712	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
SW701	63599-016-073	SWITCH-TACT;KPT-1108A	
SW702	63599-016-073	SWITCH-TACT;KPT-1108A	
SW703	63599-016-073	SWITCH-TACT;KPT-1108A	
SW704	63599-016-073	SWITCH-TACT;KPT-1108A	
SW705	63599-016-073	SWITCH-TACT;KPT-1108A	
SW706	63599-016-073	SWITCH-TACT;KPT-1108A	
SW707	63599-016-073	SWITCH-TACT;KPT-1108A	
SW708	63599-016-073	SWITCH-TACT;KPT-1108A	
SW709	63599-016-073	SWITCH-TACT;KPT-1108A	
SW710	63599-016-073	SWITCH-TACT;KPT-1108A	
SW711	63599-016-073	SWITCH-TACT;KPT-1108A	
SW712	63519-073-021	SWITCH-SLIDE;SSS 322	
SW713	63599-016-073	SWITCH-TACT;KPT-1108A	
SW714	63599-016-073	SWITCH-TACT;KPT-1108A	
SW715	63519-102-072	SWITCH SLIDE;KSA 2240A/T00220003-2	
VR701	61203-107-011	VR-ROUND;K121LOG-500KB	
VR702	61203-107-012	VR-ROUND;K121LOG-20KB	
VR703	61243-103-020	VR-SEMI;SR 19D-47KB	
	69702-603-220	ASSY MAIN B; VQ-710 PAL B/G SECAM D/K	
		AUDIO PART;G-7 PAL-NEW	
	63124-103-330	PIN-TEST POINT;BSW 1/4H PI1.0 SN	S.N.A
C0501	61507-121-511	C-POLTESTER;CQ921M TAPG 100V 0.022M-J	
C0503	61507-121-390	C-POLYESTER;CQ921M TAPG 100V 0.0022M-K	
C0504	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0505	61507-121-470	C-POLYESTER;CQ921M TAPG 100V 0.01M-K	
C0506	61607-401-450	C-ELECTROLYTIC;CE04W TAPG 16V 33M	
C0508	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0509	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C0510	61507-121-470	C-POLYESTER;CQ921M TAPG 100V 0.01M-K	
C0511	61507-121-431	C-POLYESTER;CQ921M TAPG 50V 0.0047M-J	
C0512	61507-121-481	C-POLTESTER;CQ921M TAPG 50V 0.015M-J	
C0515	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0516	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C0517	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C0518	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C0519	61507-121-451	C-POLYESTER;CQ921M TAPG 100V 0.0068M-J	
C0520	61507-121-431	C-POLYESTER;CQ921M TAPG 50V 0.0047M-J	
C0521	61509-339-010	C-POLYESTER;MDX 100V 473K	
C0522	61407-101-440	C-CERAMIC.TEMP;CC45 SL TAPG 50V 220-J	
C0523	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0524	61607-401-630	C-ELECTROLYTIC;CE04W TAPG 35V 4.7M	
IC0501	62119-103-653	IC;LA7297	
L0501	62429-010-280	COIL-PEAKING;BOAM-22MH	
L0502	62427-813-153	COIL-PEAKING;EL0607RA-153J(15MH) TAPG	
L0503	62427-812-101	COIL-PEAKING;EL0606RA-101J(100UH) TAPG	
L0504	62429-014-106	COIL-BIAS OSC;9B0 WT SHIELD CAP	
Q0501	62147-401-830	TRANSISTOR;KSD 261-Y TAPG	
R0501	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R0502	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R0503	61048-177-334	R-METAL FILM;RM 1/8TS 330K-J	
R0504	61048-177-121	R-METAL FILM;RM 1/8TS 120-J	
R0506	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	

*** S.N.A : Service Not Available**

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
R0507	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R0508	61048-177-475	R-METAL FILM;RM 1/8TS 4.7M-J	
R0509	61048-177-822	R-METAL FILM;RM 1/8TS 8.2K-J	
R0510	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R0511	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R0512	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R0513	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	
R0514	61048-177-471	R-METAL FILM;RM 1/8TS 470-J	
R0516	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R0517	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J	
R0518	61048-177-470	R-METAL FILM;RM 1/8TS 47-J	
R0519	61048-177-229	R-METAL FILM;RM 1/8TS 2.2-J	
R0520	61048-177-184	R-METAL FILM;RM 1/8TS 180K-J	
VR0501	61246-105-103	VR-SEMI;RH0615C 10KB	
VR0502	61246-105-224	VR-SEMI;RH0615C 220KB	
		VIDEO PARTS;OIRT PAL SECAM D/K	
C0301	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0301	61607-402-200	C-ELECTROLYTIC;CE04W TAPG 50V 0.47M	
C0302	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0303	61407-105-250	C-CERAMIC.TEMP;CC45 CH TAPG 50V 39-J	
C0304	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0305	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0306	61507-121-431	C-POLYESTER;CQ921M TAPG 50V 0.0047M-J	
C0307	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0308	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C0309	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0310	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J	
C0311	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0312	61407-101-380	C-CERAMIC.TEMP;CC45 SL TAPG 50V 120-J	
C0313	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0314	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0315	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J	
C0316	61407-105-250	C-CERAMIC.TEMP;CC45 CH TAPG 50V 39-J	
C0317	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0318	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0319	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C0320	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0320	61407-101-470	C-CERAMIC.TEMP;CC45 SL TAPG 50V 300-J	
C0321	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0322	61407-101-240	C-CERAMIC.TEMP;CC45 SL TAPG 50V 33-J	
C0323	61407-105-300	C-CERAMIC.TEMP;CC45 CH TAPG 50V 68-J	
C0324	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C0325	61607-121-103	C-ELECTROLYTIC;CE04W TAPG 50V 0.1M(RSS)	
C0326	61607-121-103	C-ELECTROLYTIC;CE04W TAPG 50V 0.1M(RSS)	
C0328	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J	
C0330	61407-105-280	C-CERAMIC.TEMP;CC45 CH TAPG 50V 56-J	
C0331	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0332	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C0333	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0334	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C0335	61607-401-630	C-ELECTROLYTIC;CE04W TAPG 35V 4.7M	
C0336	61607-402-220	C-ELECTROLYTIC;CE04W TAPG 50V 2.2M	
C0337	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0338	61507-121-470	C-POLYESTER;CQ921M TAPG 100V 0.01M-K	
C0340	61407-101-511	C-CERAMIC TEMP;CC45 SL TAPG 50V 510-J	
C0341	61407-105-250	C-CERAMIC.TEMP;CC45 CH TAPG 50V 39-J	
C0342	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0346	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C0347	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C0348	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0349	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0350	61407-105-300	C-CERAMIC.TEMP;CC45 CH TAPG 50V 68-J	
C0351	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J	
C0352	61607-402-220	C-ELECTROLYTIC;CE04W TAPG 50V 2.2M	
C0353	61607-401-630	C-ELECTROLYTIC;CE04W TAPG 35V 4.7M	
C0354	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C0355	61507-121-511	C-POLTESTER;CQ921M TAPG 100V 0.022M-J	
C0357	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C0358	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0359	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0360	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0361	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J	
C0363	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0364	61507-121-460	C-POLYESTER;CQ921M TAPG 100V 0.0082M-K	
C0365	61407-101-730	C-CERAMIC.TEMP;CC45 SL TAPG 50V 150-K	
C0366	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J	
C0367	61607-121-103	C-ELECTROLYTIC;CE04W TAPG 50V 0.1M(RSS)	
C0368	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C0370	61407-105-690	C-CERAMIC.TEMP;CC45 CH TAPG 50V 51-J	
C0371	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0372	61507-121-410	C-POLYESTER;CQ921M TAPG 50V 0.0033M-K	
C0373	61407-105-860	C-CERAMIC.TEMP;CC45 CH TAPG 50V 10-D	
C0374	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0375	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0376	61507-121-390	C-POLYESTER;CQ921M TAPG 100V 0.0022M-K	
C0377	61407-105-270	C-CERAMIC.TEMP;CC45 CH TAPG 50V 27-J	
C0378	61407-105-690	C-CERAMIC.TEMP;CC45 CH TAPG 50V 51-J	
C0379	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0380	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0381	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0382	61407-101-420	C-CERAMIC.TEMP;CC45 SL TAPG 50V 180-J	
C0383	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0384	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0385	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0387	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0388	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0389	61407-101-360	C-CERAMIC.TEMP;CC45 SL TAPG 50V 100-J	
C0390	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0390	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0391	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0392	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C0393	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0394	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0395	61507-121-571	C-POLYESTER;CQ921M TAPG 100V 0.068M-J	
C0396	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0397	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0398	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C0399	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J	
C11	61509-121-340	C-POLYESTER;CQ921M 100V 0.001M-K	
C3053	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C3100	61407-101-730	C-CERAMIC.TEMP;CC45 SL TAPG 50V 150-K	
C3102	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3121	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C3150	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3151	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3152	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3153	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C3154	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C3155	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C3156	61607-402-230	C-ELECTROLYTIC;CE04W TAPG 50V 3.3M	
C3157	61607-402-230	C-ELECTROLYTIC;CE04W TAPG 50V 3.3M	
C3158	61609-123-221	C-ELECTROLYTIC;CE04W 35V 220M	
C3159	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C3160	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3161	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3162	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3163	61407-101-510	C-CERAMIC.TEMP;CC45 SL TAPG 50V 470-J	
C3164	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3165	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3166	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3170	61607-402-220	C-ELECTROLYTIC;CE04W TAPG 50V 2.2M	
C3171	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3172	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
CN301	63349-062-410	CONNECTOR-WAFER;5267-12A	
CN302	63349-062-370	CONNECTOR-WAFER;5267-08A	
CN303	63349-062-360	CONNECTOR-WAFER;5267-07A	
CN304A	63349-062-330	CONNECTOR-WAFER;5267-04A	
CN304V	63349-062-340	CONNECTOR-WAFER;5267-05A	
D0302	62169-406-482	DIODE;1N4148 SAMSUNG	
D0303	62169-406-482	DIODE;1N4148 SAMSUNG	
D0304	62169-406-482	DIODE;1N4148 SAMSUNG	
D0310	62169-406-482	DIODE;1N4148 SAMSUNG	
D0311	62169-406-482	DIODE;1N4148 SAMSUNG	
D0505	62169-406-482	DIODE;1N4148 SAMSUNG	
FL0302	64529-416-381	FILTER LC;Q0186 3M LPF	
FL0301	64529-431-085	FILTER LC;SBP 630-T2	
FL0303	64529-401-200	FILTER-LC;SFB 4141	
FL0304	64569-006-011	DELAY LINE;MS-31PC-5K	
FL0310	62809-006-030	COIL TUNNING;1.072 MHZ	
FL0311	64529-416-382	FILTER LC;B0158-8 1.1M BPF	
FL0312	62809-006-030	COIL TUNNING;1.072 MHZ	
FL0313	62809-006-020	COIL TUNNING;4.28 MHZ	
FL0315	64529-431-192	FILETR LC;E831-9045-1	
FL0316	64529-431-192	FILETR LC;E831-9045-1	
IC0308	62109-103-415	IC;SVH-009	
IC0301	62119-101-744	IC;TA8607P	
IC0302	62119-101-743	IC;TA8606N	
IC0303	62119-101-742	IC;TA8605N	
IC0304	62119-101-735	IC;TA8644N	
IC0305	62119-101-755	IC;MSM6965-3RS	
IC0306	62119-103-644	IC;LA7311	
J2	63054-222-100	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 10	
J3	63054-222-100	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 10	
L0301	62427-812-470	COIL-PEAKING;EL0606RA-470J(47UH) TAPG	
L0302	62427-812-221	COIL-PEAKING;EL0606RA-221J(220UH) TAPG	
L0303	62427-812-470	COIL-PEAKING;EL0606RA-470J(47UH) TAPG	
L0304	62427-812-829	COIL-PEAKING;EL0606 8.2UH	
L0306	62427-812-331	COIL-PEAKING;EL0606RA-331J(330UH) TAPG	
L0308	62427-812-680	COIL-PEAKING;EL0606RA-680J(68UH) TAPG	
L0309	62427-812-181	COIL-PEAKING;EL0606RA 181-J(180UH) TAPG	
L0311	62427-812-121	COIL-PEAKING;EL0606RA-121J(120UH) TAPG	
L0312	62427-812-220	COIL-PEAKING;EL0606RA-220J(22UH) TAPG	
L0313	62427-812-820	COIL-PEAKING;EL0606RA-82UH TAPG	
L0314	62427-812-680	COIL-PEAKING;EL0606RA-680J(68UH) TAPG	
L0315	62427-812-221	COIL-PEAKING;EL0606RA-221J(220UH) TAPG	
L0316	62427-812-180	COIL-PEAKING;EL0606RA-180J(18UH) TAPG	
L0317	62427-812-100	COIL-PEAKING;EL0606RA-100J(10UH) TAPG	
L0318	62427-812-150	COIL-PEAKING;EL0606RA-150J(15UH) TAPG	

*** S.N.A : Service Not Available**

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
L0320	62427-812-101	COIL-PEAKING;EL0606RA-101J(100UH) TAPG	
L0326	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L3150	62427-812-221	COIL-PEAKING;EL0606RA-221J(220UH) TAPG	
P.C.B	63005-006-603	PWB-MAIN(B) 94V0 1.6X156X210 PAL VQ-710	
Q0301	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q0302	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q0303	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q0304	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q0305	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q0306	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q0307	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q0308	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q0312	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q0316	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q0320	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q0330	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
R0301	61048-177-392	R-METAL FILM;RM 1/8TS 3.9K-J	
R0302	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0303	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R0304	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J	
R0305	61048-177-471	R-METAL FILM;RM 1/8TS 470-J	
R0306	61048-177-271	R-METAL FILM;RM 1/8TS 270-J	
R0307	61048-177-221	R-METAL FILM;RM 1/8TS 220-J	
R0308	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0309	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0310	61048-177-561	R-METAL FILM;RM 1/8TS 560-J	
R0311	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R0312	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R0313	61048-177-471	R-METAL FILM;RM 1/8TS 470-J	
R0314	61048-177-681	R-METAL FILM;RM 1/8TS 680-J	
R0315	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R0316	61048-177-272	R-METAL FILM;RM 1/8TS 2.7K-J	
R0317	61048-177-202	R-METAL FILM;RM 1/8TS 2K-J	
R0318	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R0320	61048-177-511	R-METAL FILM;RM 1/8TS 510-J	
R0321	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R0322	61048-177-822	R-METAL FILM;RM 1/8TS 8.2K-J	
R0323	61048-177-202	R-METAL FILM;RM 1/8TS 2K-J	
R0324	61048-177-202	R-METAL FILM;RM 1/8TS 2K-J	
R0325	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0326	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R0327	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	
R0333	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J	
R0334	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R0335	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	
R0336	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J	
R0337	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R0338	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0339	61048-177-361	R-METAL FILM;RM 1/8TS 360-J	
R0340	61048-177-564	R-METAL FILM;RM 1/8TS 560K-J	
R0341	61048-177-474	R-METAL FILM;RM 1/8TS 470K-J	
R0342	61048-177-123	R-METAL FILM;RM 1/8TS 12K-J	
R0343	61048-177-272	R-METAL FILM;RM 1/8TS 2.7K-J	
R0344	61048-177-113	R-METAL FILM;RM 1/8TS 11K-J	
R0345	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J	
R0346	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J	
R0347	61048-177-182	R-METAL FILM;RM 1/8TS 1.8K-J	
R0348	61048-177-151	R-METAL FILM;RM 1/8TS 150-J	
R0349	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J	
R0350	61048-177-471	R-METAL FILM;RM 1/8TS 470-J	
R0351	61048-177-181	R-METAL FILM;RM 1/8TS 180-J	
R0352	61048-177-221	R-METAL FILM;RM 1/8TS 220-J	
R0353	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R0356	61048-177-274	R-METAL FILM;RM 1/8TS 270K-J	
R0357	61048-177-681	R-METAL FILM;RM 1/8TS 680-J	
R0358	61048-177-302	R-METAL FILM;RM 1/8TS 3K-J	
R0359	61048-177-823	R-METAL FILM;RM 1/8TS 82K-J	
R0360	61048-177-684	R-METAL FILM;RM 1/8TS 680K-J	
R0361	61048-177-302	R-METAL FILM;RM 1/8TS 3K-J	
R0365	61048-177-392	R-METAL FILM;RM 1/8TS 3.9K-J	
R0366	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0367	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R0368	61048-177-474	R-METAL FILM;RM 1/8TS 470K-J	
R0369	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R0370	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0371	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0372	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0374	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0375	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0376	61048-177-183	R-METAL FILM;RM 1/8TS 18K-J	
R0377	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J	
R0378	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J	
R0379	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J	
R0381	61048-177-271	R-METAL FILM;RM 1/8TS 270-J	
R0382	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J	
R0384	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R3100	61048-177-181	R-METAL FILM;RM 1/8TS 180-J	
R3101	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R3102	61048-177-181	R-METAL FILM;RM 1/8TS 180-J	
R3103	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R3106	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R3110	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R3151	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J	
R3152	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J	
R3153	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R3154	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R3155	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R3156	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R3157	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R3158	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R3159	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R3160	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R3161	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R3162	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R3166	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R3167	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R3190	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R3191	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R3192	61048-177-222	R-METAL FILM;RM 1/8TS 2.2K-J	
R3193	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
TP	63124-103-330	PIN-TEST POINT;BSW 1/4H PI1.0 SN	
VR0301	61246-105-472	VR-SEMI;RH0615C 4.7KB	
VR0302	61246-105-472	VR-SEMI;RH0615C 4.7KB	
VR0303	61246-105-103	VR-SEMI;RH0615C 10KB	
VR0304	61246-105-223	VR-SEMI;RH0615C 22KB	
VR0305	61246-105-103	VR-SEMI;RH0615C 10KB	
VR0306	61246-105-103	VR-SEMI;RH0615C 10KB	
VR0307	61246-105-103	VR-SEMI;RH0615C 10KB	
VR0308	61246-105-103	VR-SEMI;RH0615C 10KB	
VR0310	61246-105-224	VR-SEMI;RH0615C 220KB	
VR0311	61246-105-104	VR-SEMI;RH0615C 100KB	
WIRE	63054-211-182	WIRE-GND ASSY;1007 #18 270 BLK AAY	
WIRE	63054-211-090	WIRE-GND ASSY;1007 #18 190 BLK AA	
XTALI	64539-012-040	CRYSTAL;4.433619MHZ	
	69757-603-661	ASSY MAIN A;VQ721 PAL B/G SECAM D/K	
P.C.B	63005-006-677	PWB-MAIN(A);94V0 1.6X247X295(VQ-711)	S.N.A
CN60	63053-607-011	LEAD CON ASSY;1427 #26 BLK 360 CN205	
	63053-607-021	LEAD CON ASSY;1427 #26 BLK 170 CN204	
	63053-607-050	LEAD CON ASSY;1429 #26 BLK 130 CN302	
	63053-607-460	LEAD CON ASSY;1429 #26 BLK 190 CN601	
	63053-607-900	LEAD CON ASSY;1429 #26 ABLU220 CN805	
	63053-607-960	LEAD CONNECTOR;1533 #26 WHT 280 CN401	
	63053-621-860	LEAD CON ASSY;1429#26 200 BLK CN404	
		POWER-PART;PAL(G-7)-A	
	63054-222-100	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 10	
C121	61609-401-740	C-ELECTROLYTIC;CE04W 25V 220M	
C122	61609-401-740	C-ELECTROLYTIC;CE04W 25V 220M	
C123	61609-401-480	C-ELECTROLYTIC;CE04W 16V 220M	
C124	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C129	61609-401-480	C-ELECTROLYTIC;CE04W 16V 220M	
C151	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
D109	62169-406-482	DIODE;1N4148 SAMSUNG	
D110	62169-406-482	DIODE;1N4148 SAMSUNG	
D112	62169-406-482	DIODE;1N4148 SAMSUNG	
D114	62169-201-050	DIODE;IN4001	
L105	62427-813-330	COIL-PEAKING;EL0607RA-330K(33UH) TAPG	
Q105	62149-202-060	TRANSISTOR;KSB772(N.M)	
Q106	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q107	62139-302-450	TR;KSC2328Y	
Q109	62139-302-450	TR;KSC2328Y	
Q110	62139-701-055	TRANSISTOR;KSA928A-Y	
Q111	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q112	62139-701-055	TRANSISTOR;KSA928A-Y	
Q113	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q114	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
R123	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R124	61048-277-181	R-METAL FILM;RM 1/4T 180-J	
R124	61048-277-181	R-METAL FILM;RM 1/4T 180-J	
R125	61048-277-271	R-METAL FILM;RM 1/4T 270-J	
R128	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R129	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J	
R130	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	
R131	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	
R641	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
ZD104	62169-403-761	DIODE-ZENER;RD 12EB2	
ZD105	62169-403-390	DIODE-ZENER;RD 9.1 EB2	
		SERVO-PART;PAL(G-7)-B	
C201	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C202	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C203	61507-121-570	C-POLYESTER;CQ921M TAPG 100V 0.068M-K	
C204	61607-803-210	C-ELECTROLYTIC.NP;CE04W TAPG 50V 1M	
C205	61507-121-520	C-POLYESTER;CQ921M TAPG 50V 0.027M-K	
C207	61507-121-470	C-POLYESTER;CQ921M TAPG 100V 0.01M-K	
C208	61507-121-470	C-POLYESTER;CQ921M TAPG 100V 0.01M-K	

* S.N.A : Service Not Available

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
C209	61507-121-540	C-POLYESTER;CQ921M TAPG 100V 0.039M-K	
C210	61507-121-540	C-POLYESTER;CQ921M TAPG 100V 0.039M-K	
C211	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C212	61507-121-420	C-POLYESTER;CQ921M TAPG 100V 0.0039-K	
C213	61507-121-440	C-POLYESTER;CQ921M TAPG 100V 0.0056M-K	
C215	61607-803-120	C-ELECTROLYTIC.NP;CE04W TAPG 16V 10M	
C217	61609-803-101	C-ELECTROLYTIC.NP;CE04W 16V 100M	
C218	61507-121-260	C-POLYESTER;CQ921M TAPG 50V 0.1M-J	
C219	61607-803-210	C-ELECTROLYTIC.NP;CE04W TAPG 50V 1M	
C222	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C223	61507-121-420	C-POLYESTER;CQ921M TAPG 100V 0.0039-K	
C224	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C225	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C226	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C227	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C228	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C230	61507-121-440	C-POLYESTER;CQ921M TAPG 100V 0.0056M-K	
C231	61507-121-390	C-POLYESTER;CQ921M TAPG 100V 0.0022M-K	
C236	61507-121-420	C-POLYESTER;CQ921M TAPG 100V 0.0039-K	
C237	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C295	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
CN203	63349-062-380	CONNECTOR-WAFER;5267-09A	
D201	62169-406-482	DIODE;1N4148 SAMSUNG	
D202	62169-406-482	DIODE;1N4148 SAMSUNG	
D203	62169-406-482	DIODE;1N4148 SAMSUNG	
D204	62169-406-482	DIODE;1N4148 SAMSUNG	
IC201	62119-101-756	IC;SD3624A	
IC202	62119-501-572	IC-LINEAR;LM358S(N.M)	
IC203	62119-101-746	IC;TA 8617S	
IC204	62119-501-571	IC-LINER;KA2618	
Q200	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q201	62137-701-011	TRANSISTOR;KSR 1002 TAPG	
Q202	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q203	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q206	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
R201	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J	
R202	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R204	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J	
R205	61048-177-331	R-METAL FILM;RM 1/8TS 330-J	
R208	61048-177-682	R-METAL FILM;RM 1/8TS 6.8K-J	
R209	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R210	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R211	61048-177-820	R-METAL FILM;RM 1/8TS 82-J	
R214	61048-177-334	R-METAL FILM;RM 1/8TS 330K-J	
R215	61048-177-334	R-METAL FILM;RM 1/8TS 330K-J	
R216	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J	
R217	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R218	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R219	61048-177-274	R-METAL FILM;RM 1/8TS 270K-J	
R220	61048-177-474	R-METAL FILM;RM 1/8TS 470K-J	
R221	61048-177-153	R-METAL FILM;RM 1/8TS 15K-J	
R222	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R223	61048-177-684	R-METAL FILM;RM 1/8TS 680K-J	
R224	61048-177-563	R-METAL FILM;RM 1/8TS 56K-J	
R225	61048-177-563	R-METAL FILM;RM 1/8TS 56K-J	
R226	61048-177-682	R-METAL FILM;RM 1/8TS 6.8K-J	
R227	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J	
R228	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R229	61048-277-101	R-METAL FILM;RM 1/4T 100-J	
R230	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R231	61048-177-392	R-METAL FILM;RM 1/8TS 3.9K-J	
R232	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R233	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J	
R234	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R235	61048-177-303	R-METAL FILM;RM 1/8TS 30K-J	
R236	61048-177-105	R-METAL FILM;RM 1/8TS 1M-J	
R237	61048-177-334	R-METAL FILM;RM 1/8TS 330K-J	
R238	61048-177-471	R-METAL FILM;RM 1/8TS 470-J	
R239	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R240	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R241	61048-177-302	R-METAL FILM;RM 1/8TS 3K-J	
R242	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R244	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R246	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R247	61048-177-474	R-METAL FILM;RM 1/8TS 470K-J	
R254	61048-177-821	R-METAL FILM;RM 1/8TS 820-J	
R348	61048-177-474	R-METAL FILM;RM 1/8TS 470K-J	
VR201	61246-105-104	VR-SEMI;RH0615C 100KB	
VR202	61246-105-104	VR-SEMI;RH0615C 100KB	
VR203	61246-105-474	VR-SEMI;RH0615C 470KB	
		SYSCON PART;PAL(G-7)-A VX	
C6	61407-101-440	C-CERAMIC.TEMP;CC45 SL TAPG 50V 220-J	
C601	61607-402-200	C-ELECTROLYTIC;CE04W TAPG 50V 0.47M	
C602	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C603	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C604	61417-109-210	C-CERAMIC.HK;CK45 F TAPG 50V 0.1M-Z	
C605	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C606	61417-109-210	C-CERAMIC.HK;CK45 F TAPG 50V 0.1M-Z	

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
C607	61417-109-040	C-CERAMIC.HK;CK45 F TAPG 50V 0.001M-Z	
C608	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C609	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C610	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C611	61417-109-200	C-CERAMIC.HK;CK45 F TAPG 50V 0.047M-Z	
C612	61607-401-440	C-ELECTROLYTIC;CE04W TAPG 16V 22M	
C613	61609-401-472	C-ELECTROLYTIC;CE04W 10V 4700M	
C614	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C615	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C618	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C619	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
CN601	63349-062-410	CONNECTOR-WAFER;5267-12A	
D601	62169-406-482	DIODE;1N4148 SAMSUNG	
D602	62169-406-482	DIODE;1N4148 SAMSUNG	
D603	62169-406-482	DIODE;1N4148 SAMSUNG	
D604	62169-406-482	DIODE;1N4148 SAMSUNG	
D605	62169-406-482	DIODE;1N4148 SAMSUNG	
IC601	62109-321-110	IC;UPD 75104 CW-126	
IC602	62119-101-025	IC;CXK1005P	
IC603	62119-401-281	IC;KA-2103LN(N.M)	
Q601	62137-701-010	TRANSISTOR;KSR 1001 TAPG	
Q602	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q603	62137-301-900	TRANSISTOR;KSC 838-Y TAPG	
R6	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R6	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J	
R601	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R602	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R603	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R604	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R605	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R606	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R607	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R608	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R609	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R610	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R612	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R613	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R614	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R615	61049-427-330	R-METAL OXIDE;RS 1P 33-J	
R616	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R618	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R619	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R620	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R621	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R622	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R623	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R624	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R625	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R626	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R627	61048-177-154	R-METAL FILM;RM 1/8TS 150K-J	
R628	61048-177-823	R-METAL FILM;RM 1/8TS 82K-J	
R629	61048-177-472	R-METAL FILM;RM 1/8TS 4.7K-J	
R631	61048-177-123	R-METAL FILM;RM 1/8TS 12K-J	
R632	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J	
R633	61048-177-273	R-METAL FILM;RM 1/8TS 27K-J	
R634	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R635	61048-177-333	R-METAL FILM;RM 1/8TS 33K-J	
R636	61048-177-221	R-METAL FILM;RM 1/8TS 220-J	
R637	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R638	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J	
R639	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J	
R650	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J	
WIRE	63054-222-100	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 10	
WIRE	63054-222-180	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 18	
XT601	64539-102-012	CERAMIC RESONATOR;FCR 4.0MC	
		TUNER PARTS;PAL B/G SECAM D/K	
	63054-401-670	CABLE-COAXIAL ASSY;UL AWG 30 BLK 100 AA	
	63954-100-320	CERAMIC-PIPE;PI2.6 5MM WHT	S.N.A
	63104-600-110	GROUND-CAP;PBSS T0.5 G-7C	
	63124-103-330	PIN-TEST POINT;BSW 1/4H PI1.0 SN	S.N.A
RF CON	62569-002-241	RF CONVERTOR;MCB4-UZ3609	
	63054-211-140	WIRE-GND;107 #18 BLK 140M/M(YY)	
	63054-222-060	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 60	
	63054-222-080	WIRE-JUMPER(H-WRAP);1007 #26-SOLD WHT 80	
135	63344-010-050	HOLDER JACK;HXJ0620-01-010	
146	64543-603-410	SHIELD CASE TOP;SPTE T0.25(G-7W PAL)	S.N.A
147	64543-603-110	SHIELD CASE BODY;SPTE T0.25(G-7W PAL)	S.N.A
148	64544-610-610	SHIELD CASE BOT;SPTE T0.25(G-7W PAL)	S.N.A
C401	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C403	61407-101-121	C-CERAMIC.TEMP;CC45 SL TAPG 50V 10-D	
C404	61407-105-250	C-CERAMIC.TEMP;CC45 CH TAPG 50V 39-J	
C405	61407-101-200	C-CERAMIC.TEMP;CC45 SL TAPG 50V 22-J	
C406	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C407	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C409	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C410	61607-401-440	C-ELECTROLYTIC;CE04W TAPG 16V 22M	
C411	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C412	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	

* S.N.A : Service Not Available

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
C413	61607-402-200	C-ELECTROLYTIC;CE04W TAPG 50V 0.47M	
C414	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C415	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
C416	61407-101-121	C-CERAMIC.TEMP;CC45 SL TAPG 50V 10-D	
C417	61607-402-421	C-ELECTROLYTIC;CE04W TAPG 25V 0.22M	
C418	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C419	61419-109-220	C-CERAMIC HK;CK45 F 50V 0.022M-Z	
C420	61419-109-220	C-CERAMIC HK;CK45 F 50V 0.022M-Z	
C421	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C422	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C423	61507-121-630	C-POLTESTER;CQ921M TAPG 100V 0.012MK	
C424	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C425	61407-105-640	C-CERAMIC.TEMP;CC45 CH TAPG 50V 2-C	
C426	61609-401-500	C-ELECTROLYTIC;CE04W 16V 470M	
C427	61407-101-483	C-CERAMIC TEMP;CC45 SL TAPG 50V 47J	
C428	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C429	61609-401-500	C-ELECTROLYTIC;CE04W 16V 470M	
C430	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C431	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J	
C432	61607-401-430	C-ELECTROLYTIC;CE04W TAPG 25V 10M	
C433	61609-401-500	C-ELECTROLYTIC;CE04W 16V 470M	
C434	61417-109-210	C-CERAMIC.HK;CK45 F TAPG 50V 0.1M-Z	
D401	62169-406-482	DIODE;1N4148 SAMSUNG	
FL401	64529-421-022	CERAMIC-TRAP;TPS 6.5MB	
FL402	64529-418-064	SAW-FILTER;TSF-1321	
FL403	62719-049-014	TRANS-COIL(T3);55M TUNING-COIL	
FL404	62719-049-013	TRANS-AFT(T2);40MHZ AFT-BAL	
FL405	62719-049-012	TRANS-RESONANT(TI);40MHZ V-DET	
FL409	64529-421-021	CERAMIC-TRAP;TPS-5.5MB	
FL410	62429-832-080	COIL VARIABLE;1.2CH PSF MATCH	
IC401	62119-101-745	IC;TA8611AN	
IC402	62119-501-560	IC-L;KA33V	
IC403	62119-101-748	IC;TA7348P	
IC404	62119-101-748	IC;TA7348P	
L401	62427-812-829	COIL-PEAKING;EL0606 8.2UH	
L402	62427-812-390	COIL-PEAKING;EL0606RA-390J(39UH) TAPG	
L403	62429-811-010	COIL-PEAKING;DAESIN 10NZ R55K	
L404	62427-812-229	COIL-PEAKING;EL0606RA-2R2K(2.2UH) TAPG	
L405	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L406	62427-812-220	COIL-PEAKING;EL0606RA-220J(22UH) TAPG	
L407	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L408	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
Q402	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q403	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q404	62147-101-950	TRANSISTOR;KSA 643-Y TAPG	
Q405	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q406	62139-301-090	TRANSISTOR;KTC 388ATM	
Q407	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q408	62137-301-900	TRANSISTOR;KSC 838-Y TAPG	
Q410	62137-701-010	TRANSISTOR;KSR 1001 TAPG	
R402	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R403	61048-177-202	R-METAL FILM;RM 1/8TS 2K-J	
R405	61048-177-750	R-METAL FILM;RM 1/8TS 75-J	
R406	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R407	61048-177-680	R-METAL FILM;RM 1/8TS 68-J	
R408	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R409	61048-177-331	R-METAL FILM;RM 1/8TS 330-J	
R410	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J	
R411	61048-177-681	R-METAL FILM;RM 1/8TS 680-J	
R412	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R413	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J	
R414	61048-177-270	R-METAL FILM;RM 1/8TS 27-J	
R415	61048-177-332	R-METAL FILM;RM 1/8TS 3.3K-J	
R416	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J	
R417	61048-177-221	R-METAL FILM;RM 1/8TS 220-J	
R418	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R420	61048-177-510	R-METAL FILM;RM 1/8TS 51-J	
R421	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R422	61048-177-104	R-METAL FILM;RM 1/8TS 100K-J	
R423	61048-177-393	R-METAL FILM;RM 1/8TS 39K-J	
R424	61048-177-683	R-METAL FILM;RM 1/8TS 68K-J	
R425	61048-177-512	R-METAL FILM;RM 1/8TS 5.1K-J	
R427	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R428	61048-177-682	R-METAL FILM;RM 1/8TS 6.8K-J	
R429	61048-177-473	R-METAL FILM;RM 1/8TS 47K-J	
R430	61048-177-683	R-METAL FILM;RM 1/8TS 68K-J	
R431	61048-177-911	R-METAL FILM;RM 1/8TS 910-J	
R432	61048-177-561	R-METAL FILM;RM 1/8TS 560-J	
R433	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R434	61048-177-223	R-METAL FILM;RM 1/8TS 22K-J	
R435	61048-177-750	R-METAL FILM;RM 1/8TS 75-J	
R436	61049-327-680	R-METAL OXIDE;RS 2P 68-J	
R437	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R440	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R441	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R445	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R446	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J	
R448	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R449	61048-177-272	R-METAL FILM;RM 1/8TS 2.7K-J	
R450	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	

LOCA.NO	PART-NUMBER	DESCRIPTION;SPECIFICATION	REMARK
R451	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J	
R457	61048-227-102	R-METAL FILM;RM 1/4P 1K-J	
R460	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R461	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
TUNER	64519-902-026	TUNER;ECC-2885 PLE G-7 CABLE	
VR401	61246-105-103	VR-SEMI;RH0615C 10KB	
		SIF-CONV PART;PAL B/G SECAM D/K	
	63005-006-602	PWB SIF-CONV;94V0 1.6X247X154	S.N.A
C0404	61407-101-460	C-CERAMIC.TEMP;CC45 SL TAPG 50V 270-J	
C0405	61407-101-480	C-CERAMIC TEMP;CC45 SL TAPG 50V 330-J	
C0406	61407-101-230	C-CERAMIC.TEMP;CC45 SL TAPG 50V 27-J	
C0407	61407-101-170	C-CERAMIC TEMP;CC45 SL TAPG 50V 150-J	
C0408	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0409	61407-101-170	C-CERAMIC TEMP;CC45 SL TAPG 50V 150-J	
C0410	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C0411	61509-121-260	C-POLYESTER;CQ921M 100V 0.1M-J	
C0412	61407-101-230	C-CERAMIC.TEMP;CC45 SL TAPG 50V 27-J	
C0413	61609-401-470	C-ELECTROLYTIC;CE04W 16V 100M	
CN0401	63349-062-330	CONNECTOR-WAFER;5267-04A	
FL0401	64529-425-030	CERAMIC-FILTER;SFE 6.5MB	
FL0402	64529-310-012	CERAMIC-FILTER;SFE-5.5MB	
FL0403	62429-037-041	SIF-COIL;CX-517F (1MHZ)	
FL0404	64529-310-012	CERAMIC-FILTER;SFE-5.5MB	
Q0403	62137-301-900	TRANSISTOR;KSC 838-Y TAPG	
Q0404	62137-301-900	TRANSISTOR;KSC 838-Y TAPG	
Q0405	62137-301-900	TRANSISTOR;KSC 838-Y TAPG	
R0410	61048-177-122	R-METAL FILM;RM 1/8TS 1.2K-J	
R0411	61048-177-682	R-METAL FILM;RM 1/8TS 6.8K-J	
R0412	61048-177-562	R-METAL FILM;RM 1/8TS 5.6K-J	
R0413	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R0414	61048-177-203	R-METAL FILM;RM 1/8TS 20K-J	
R0415	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0416	61048-177-203	R-METAL FILM;RM 1/8TS 20K-J	
R0417	61048-177-241	R-METAL FILM;RM 1/8TS 240-J	
R0418	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0419	61048-177-681	R-METAL FILM;RM 1/8TS 680-J	
R0420	61048-177-102	R-METAL FILM;RM 1/8TS 1K-J	
R0421	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J	
R0422	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
		PRE AMP PART;VX-730(VPS)	
	64544-610-810	CASE-BOTTOM PREAMP;SPTE 0.3T	S.N.A
	64544-610-910	CASE-TOP PREAMP;SPTE 0.3T	S.N.A
	63379-600-078	PC BOARD CONNECTOR;3024-10 AHPB	
	65104-702-510	PIN TEST POINT;BSW 1/2H PI0.9 SN7.5	S.N.A
	63005-006-438	PWB PRE AMP;G-7 PAL 1.6TX195X110.5	S.N.A
	63054-211-110	WIRE-GND ASSY;1007 #18 150 BLK AO	
C3106	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3107	61407-105-300	C-CERAMIC.TEMP;CC45 CH TAPG 50V 68-J	
C3108	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3109	61407-105-320	C-CERAMIC.TEMP;CC45 CH TAPG 50V 82-J	
C3110	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3111	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	
C3113	61507-121-511	C-POLTESTER;CQ921M TAPG 100V 0.022M-J	
C3114	61507-121-511	C-POLTESTER;CQ921M TAPG 100V 0.022M-J	
C3115	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3116	61607-401-440	C-ELECTROLYTIC;CE04W TAPG 16V 22M	
C3116	61607-401-471	C-ELECTROLYTIC;CE04W TAPG 16V 100M(SG)	
C3117	61407-117-104	C-CERAMIC AXIAL;TAPG Y 16V 0.01-N	
C3118	61607-401-460	C-ELECTROLYTIC(SG);CE04W TAPG 16V 47M	
CN306	63349-601-060	CONNECTOR WAFER;5234-07A	
D0305	62169-406-482	DIODE;1N4148 SAMSUNG	
D0306	62169-406-482	DIODE;1N4148 SAMSUNG	
IC0307	62119-101-730	IC;TA7772P	
L3001	62427-812-399	COIL-PEAKING;EL0606RA-3R9K(3.9UH) TAPG	
R0388	61048-177-101	R-METAL FILM;RM 1/8TS 100-J	
R0389	61048-177-151	R-METAL FILM;RM 1/8TS 150-J	
R0390	61048-177-151	R-METAL FILM;RM 1/8TS 150-J	
R0391	61048-177-391	R-METAL FILM;RM 1/8TS 390-J	
R0392	61048-177-151	R-METAL FILM;RM 1/8TS 150-J	
R0393	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J	
R0394	61048-177-152	R-METAL FILM;RM 1/8TS 1.5K-J	
R0395	61048-177-103	R-METAL FILM;RM 1/8TS 10K-J	
R0396	61048-177-151	R-METAL FILM;RM 1/8TS 150-J	
R3112	61607-402-210	C-ELECTROLYTIC;CE04W TAPG 50V 1M	

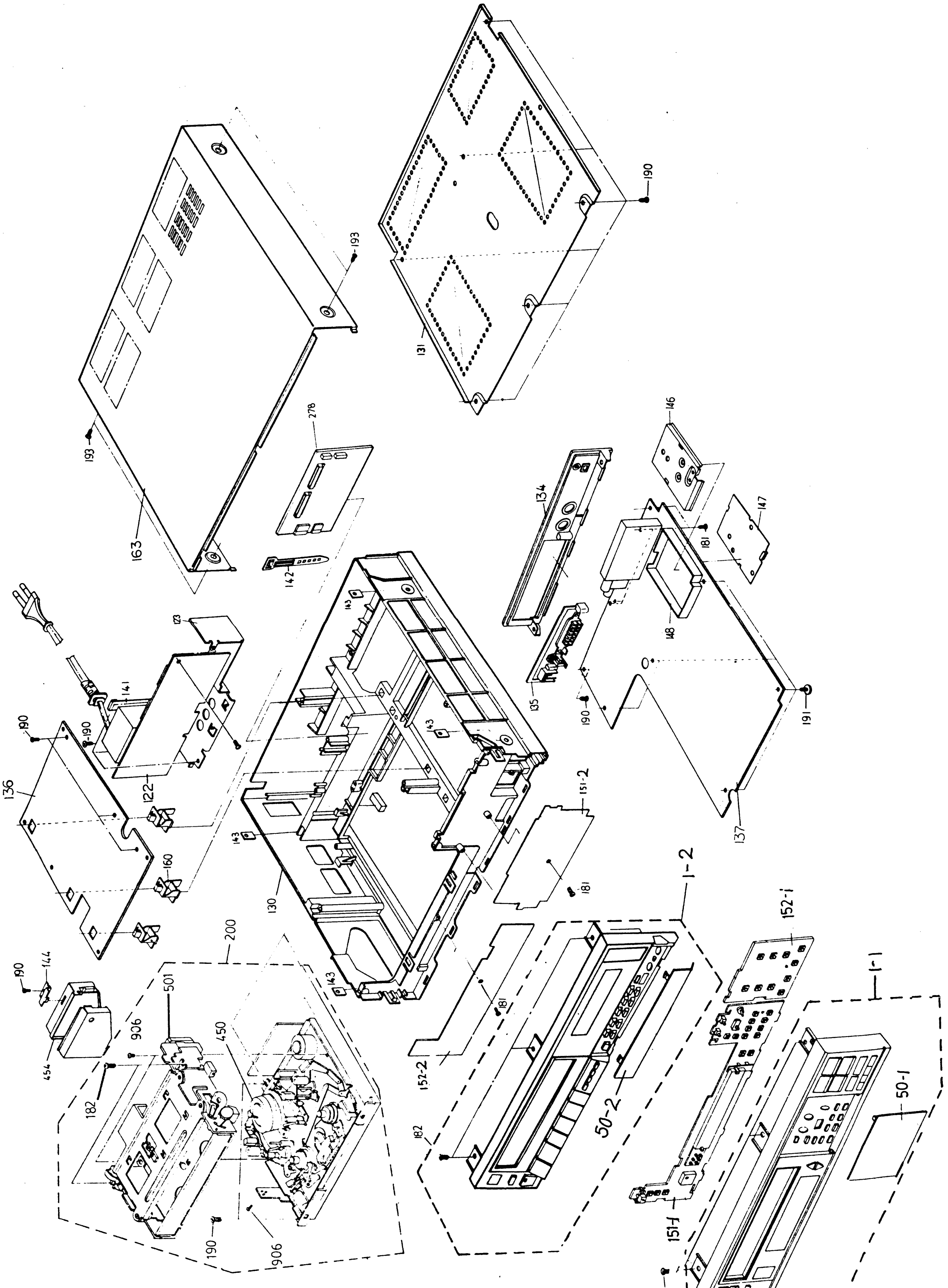
* S.N.A : Service Not Available

7. MECHANICAL EXPLODED VIEWS

Page

- Instrument Assembly 7-2
- Transport Mechanical Assembly 7-3
- Bottom Side Mechanical Assembly 7-4
- Housing Assembly 7-5

• Instrument Assembly



193
163
193
190
131
278
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147
181
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135
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191
137
123
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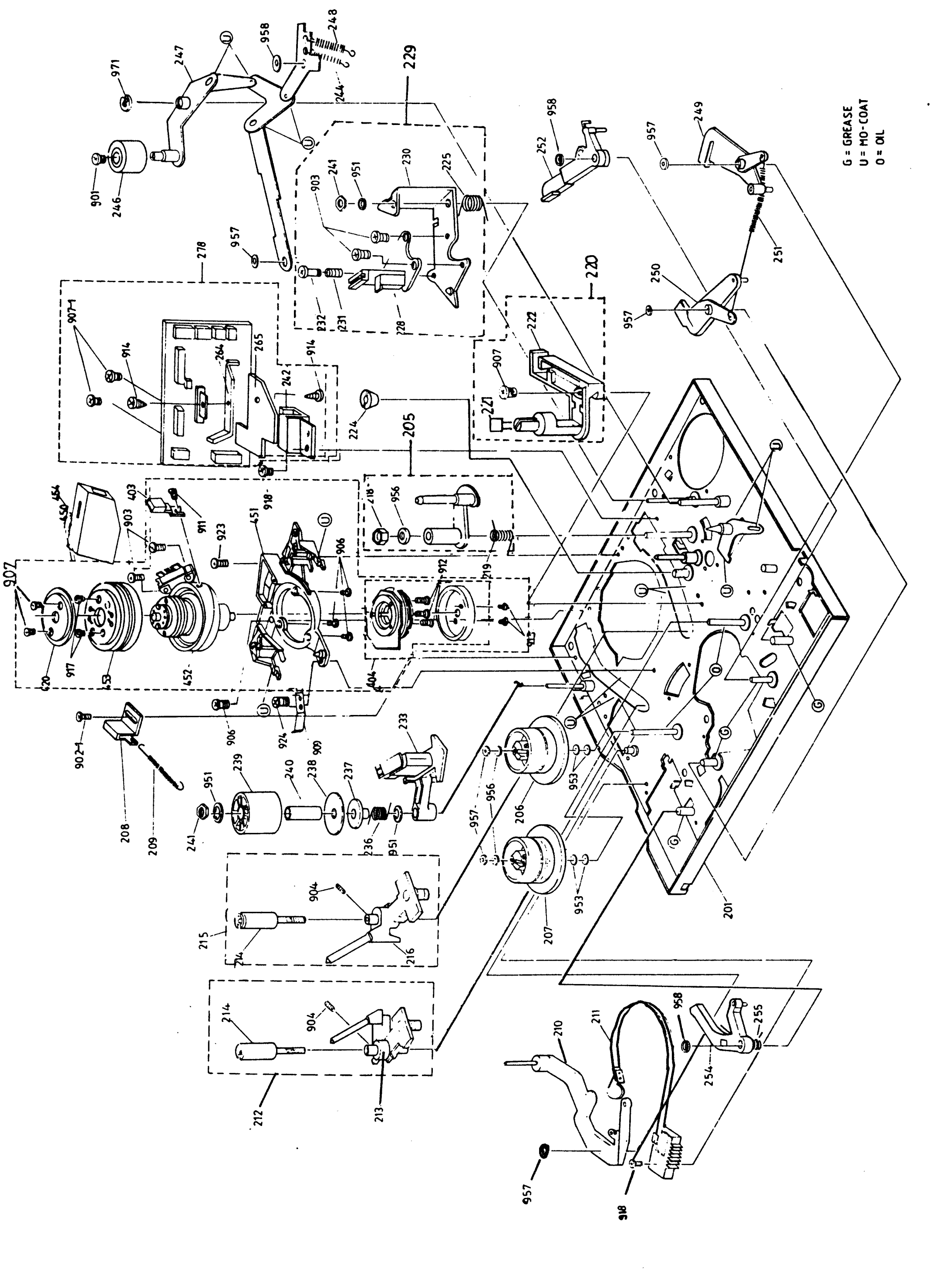
190
190
136
122
160
143
143
143
143
130
151-2
181
1-2
152-1
1-1
200
190
144
454
501
906
450
182
190
906
181
152-2
182
50-2
151-1
50-1
182

• Transport Mechanical Assembly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958
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971
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225
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903
278
957
907-1
914
264
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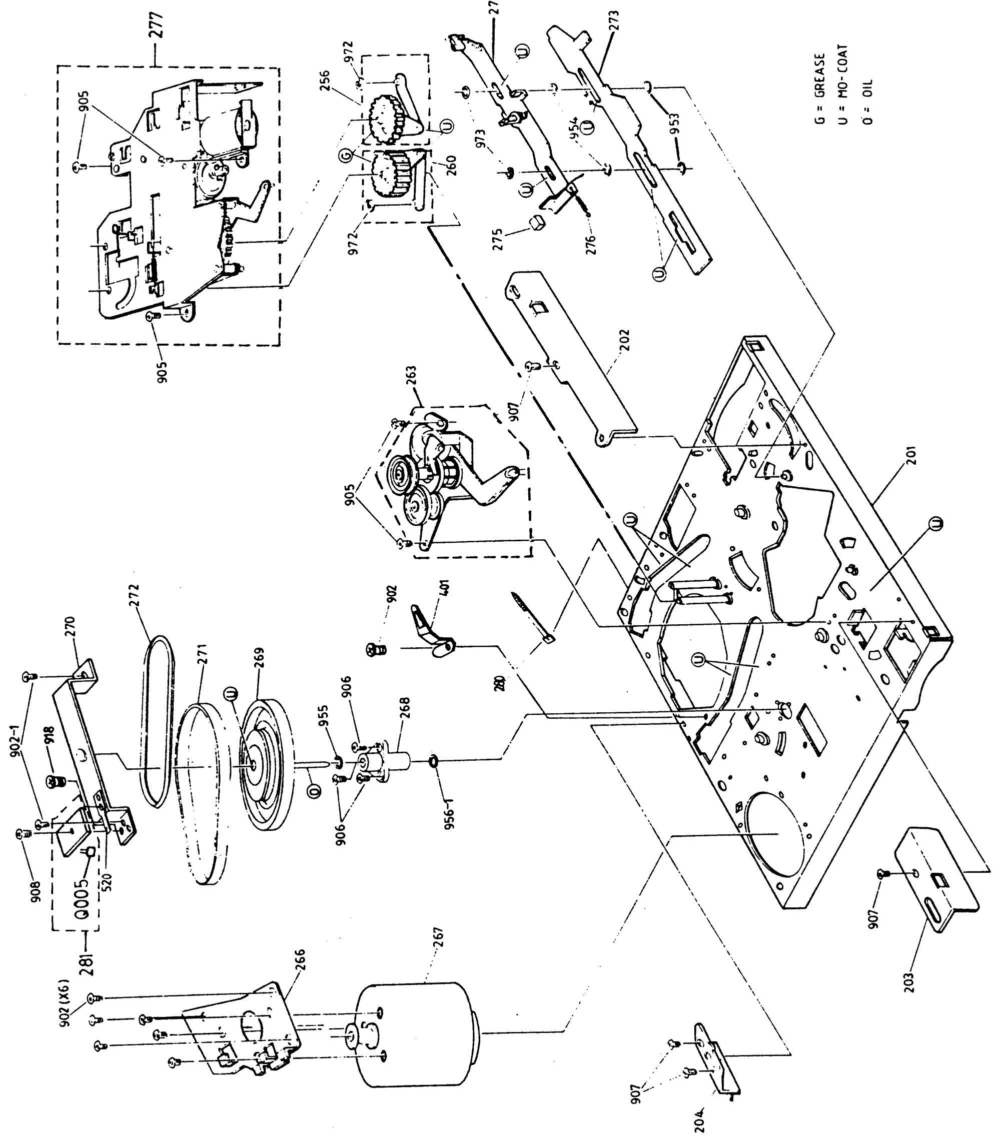
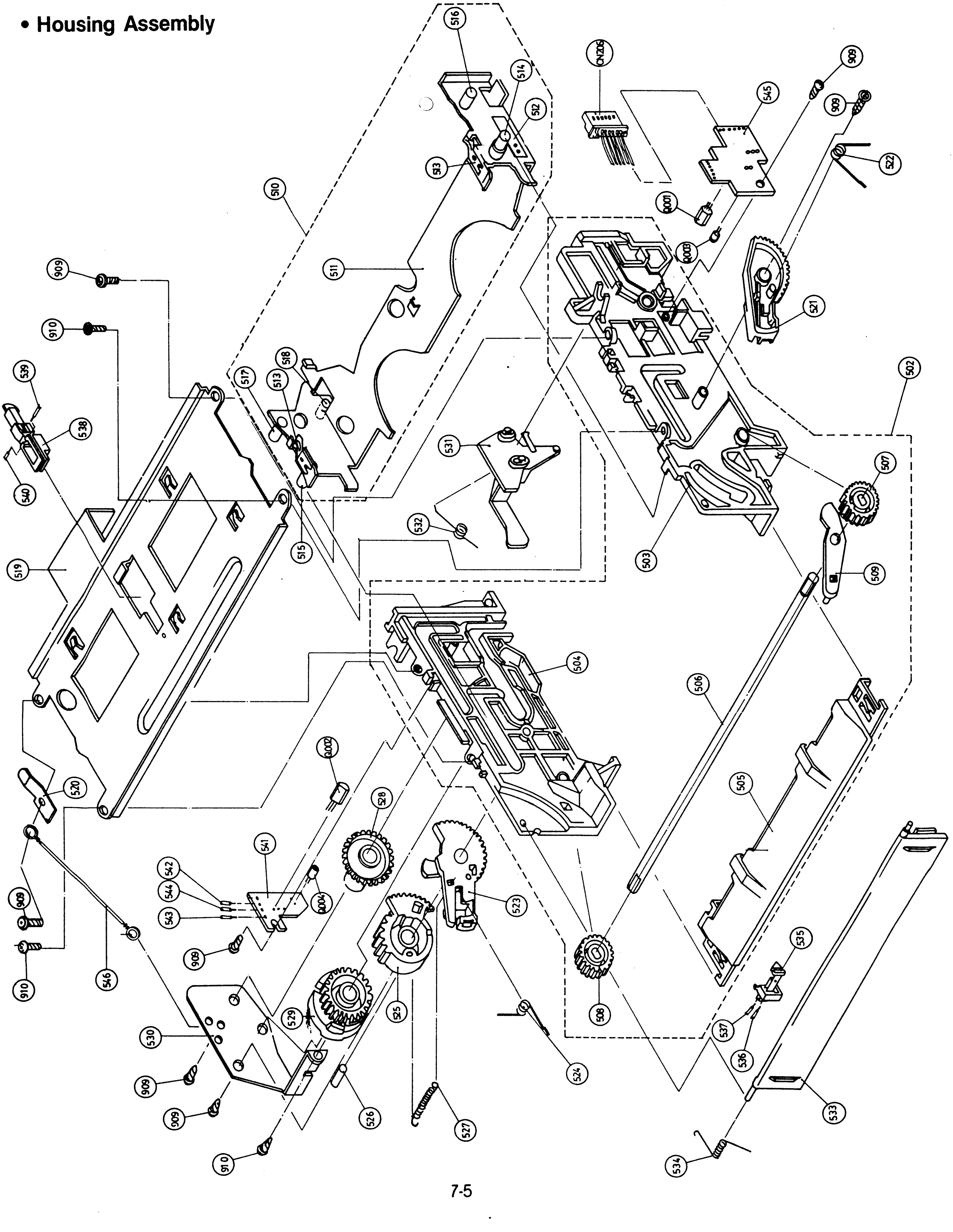
914
232
231
228
958
252
957
249
220
222
907
221
224
205
250
251
957
454
450
403
911
923
903
451
918
218
956
906
219
912
907
420
917
453
452
404
913
906
924
909
902-1
208
209
951
241
239
240
238
237
236
951
233
957
956
206
953
207
953
201
904
215
214
216
214
904
212
213
210
211
958
255
254
957
918
G = GREASE
U = MO-COAT
O = OIL

• Bottom Side Mechanical Assembly


277
905
905
256
972
972
260
274
273
973
954
953
275
276
202
263
907
905
201
272
270
902-1
918
271
269
955
906
268
902
401
280
956-1
906
908
Q005
520
281
266
902 (X6)
267
907
203
907
204
G = GREASE
U = MO-COAT
O = OIL

• Housing Assembly

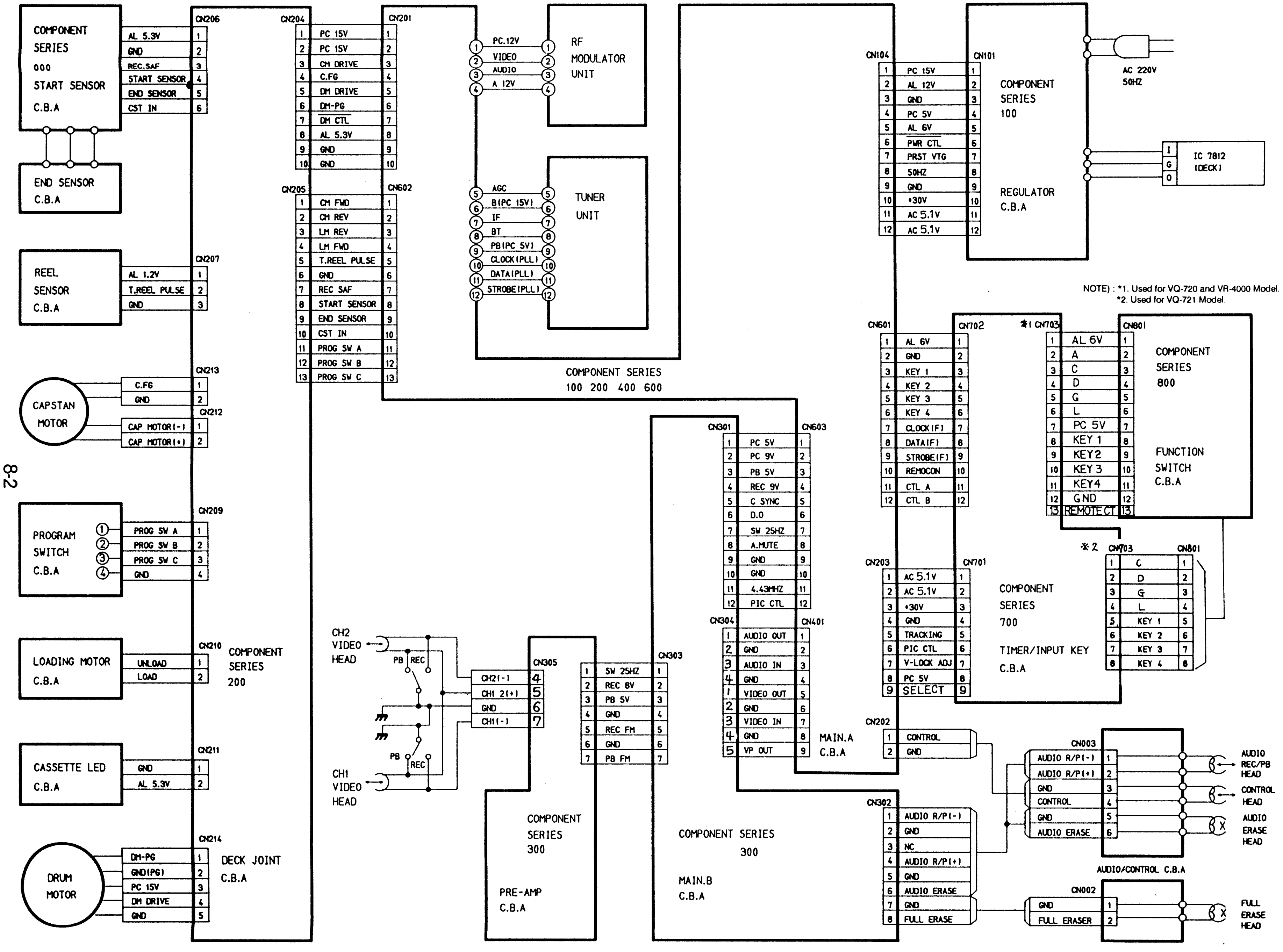

516
514
512
513
510
511
909
910
539
538
540
519
517
518
513
515
531
532
503
CN206
545
909
909
522
Q001
Q003
521
502
507
509
504
506
505
Q002
528
541
542
544
543
Q004
909
520
909
910
546
523
525
529
530
909
909
910
526
527
524
508
535
537
536
533
534

8. BLOCK DIAGRAM

Page

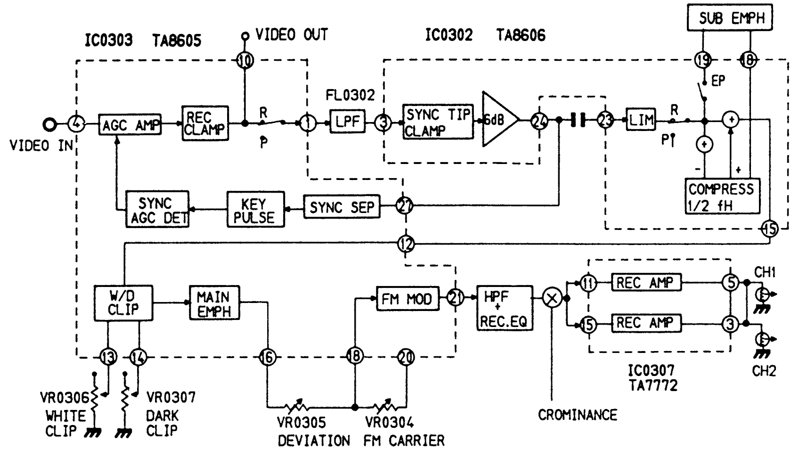
- Total Wiring Diagram 8-2
- Luminance Record Process 8-3
- Luminance Playback Process 8-3
- PAL Chrominance Record Process 8-4
- PAL Chrominance Playback Process 8-4
- SECAM Chrominance Record Process 8-5
- SECAM Chrominance Playback Process 8-5
- Audio Record Process 8-6
- Audio Playback Process 8-6
- Drum Speed Control 8-7
- Drum Phase Control 8-7
- Capstan Speed Control 8-8
- Capstan Phase Control 8-8

• Total Wiring Diagram

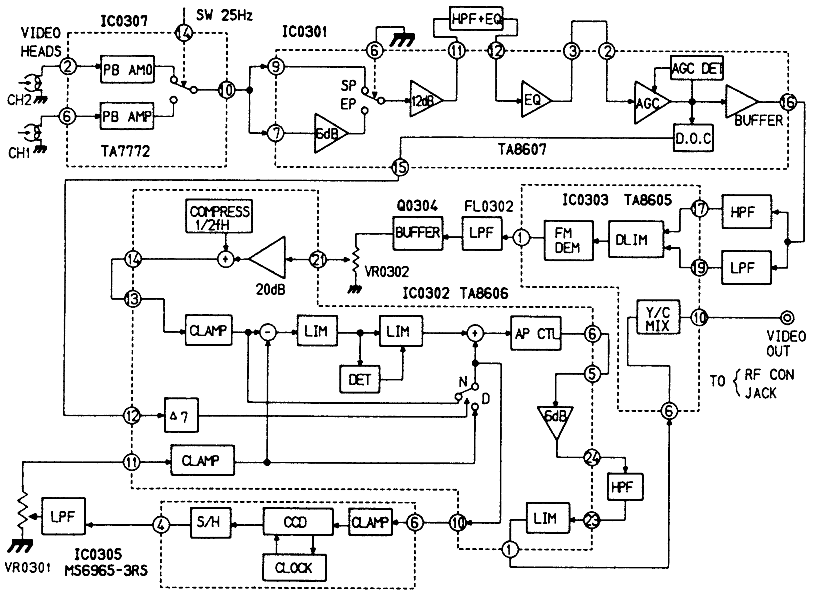

COMPONENT SERIES 000 START SENSOR C.B.A
END SENSOR C.B.A
REEL SENSOR C.B.A
CAPSTAN MOTOR
PROGRAM SWITCH C.B.A
LOADING MOTOR C.B.A
CASSETTE LED C.B.A
DRUM MOTOR
CN206
AL 5.3V
GND
REC.SAF
START SENSOR
END SENSOR
CST IN
CN207
AL 1.2V
T.REEL PULSE
GND
CN213
C.FG
GND
CN212
CAP MOTOR(-)
CAP MOTOR(+)
CN209
PROG SW A
PROG SW B
PROG SW C
GND
CN210
UNLOAD
LOAD
CN211
GND
AL 5.3V
CN214
DM-PG
GND(PG)
PC 15V
DM DRIVE
GND
COMPONENT SERIES 200
DECK JOINT C.B.A
CN204
CN201
PC 15V
PC 15V
CM DRIVE
C.FG
DM DRIVE
DM-PG
DM CTL
AL 5.3V
GND
GND
CN205
CN602
CM FWD
CM REV
LM REV
LM FWD
T.REEL PULSE
GND
REC SAF
START SENSOR
END SENSOR
CST IN
PROG SW A
PROG SW B
PROG SW C
PC.12V
VIDEO
AUDIO
A 12V
RF MODULATOR UNIT
AGC
B(PC 15V)
IF
BT
PB(PC 5V)
CLOCK(PLL)
DATA(PLL)
STROBE(PLL)
TUNER UNIT
COMPONENT SERIES 100 200 400 600
CN104
CN101
PC 15V
AL 12V
GND
PC 5V
AL 6V
PWR CTL
PRST VTG
50HZ
GND
+30V
AC 5.1V
AC 5.1V
COMPONENT SERIES 100
REGULATOR C.B.A
AC 220V 50HZ
IC 7812 (DECK)
I
G
O
CN601
CN702
*1 CN703
CN801
AL 6V
GND
KEY 1
KEY 2
KEY 3
KEY 4
CLOCK(F)
DATA(F)
STROBE(F)
REMOCON
CTL A
CTL B
AL 6V
A
C
D
G
L
PC 5V
KEY 1
KEY2
KEY 3
KEY4
GND
REMOTE CT
COMPONENT SERIES 800
FUNCTION SWITCH C.B.A
CN301
CN603
PC 5V
PC 9V
PB 5V
REC 9V
C SYNC
D.O
SW 25HZ
A.MUTE
GND
GND
4.43MHZ
PIC CTL
CN304
CN401
AUDIO OUT
GND
AUDIO IN
GND
VIDEO OUT
GND
VIDEO IN
GND
VP OUT
MAIN.A C.B.A
CN203
CN701
AC 5.1V
AC 5.1V
+30V
GND
TRACKING
PIC CTL
V-LOCK ADJ
PC 5V
SELECT
COMPONENT SERIES 700
TIMER/INPUT KEY C.B.A
※2 CN703
CN801
C
D
G
L
KEY 1
KEY 2
KEY 3
KEY 4
CH2 VIDEO HEAD
CH1 VIDEO HEAD
PB
REC
CN305
CH2(-)
CH1 2(+)
GND
CH1(-)
CN303
SW 25HZ
REC 8V
PB 5V
GND
REC FM
GND
PB FM
COMPONENT SERIES 300
PRE-AMP C.B.A
COMPONENT SERIES 300
MAIN.B C.B.A
CN202
CONTROL
GND
CN302
AUDIO R/P(-)
GND
NC
AUDIO R/P(+)
GND
AUDIO ERASE
GND
FULL ERASE
CN003
AUDIO R/P(-)
AUDIO R/P(+)
GND
CONTROL
GND
AUDIO ERASE
AUDIO/CONTROL C.B.A
AUDIO REC/PB HEAD
CONTROL HEAD
AUDIO ERASE HEAD
CN002
GND
FULL ERASER
FULL ERASE HEAD

NOTE) : *1. Used for VQ-720 and VR-4000 Model.
*2. Used for VQ-721 Model.

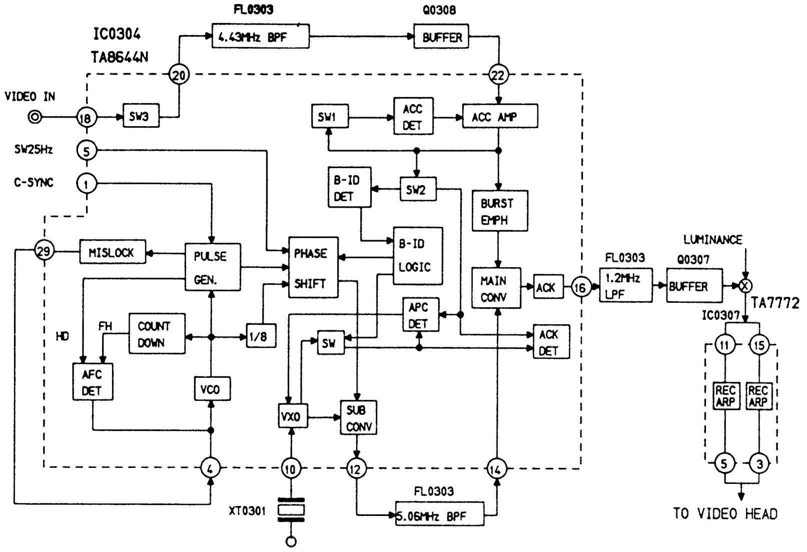
•Luminance Record Process


IC0303 TA8605
VIDEO OUT
IC0302 TA8606
SUB EMPH
VIDEO IN
AGC AMP
REC CLAMP
R
P
FL0302
LPF
SYNC TIP CLAMP
6dB
LIM
EP
PT
COMPRESS 1/2 fH
SYNC AGC DET
KEY PULSE
SYNC SEP
W/D CLIP
MAIN EMPH
FM MOD
HPF + REC.EQ
REC AMP
REC AMP
CH1
CH2
IC0307 TA7772
VR0306 WHITE CLIP
VR0307 DARK CLIP
VR0305 DEVIATION
VR0304 FM CARRIER
CROMINANCE

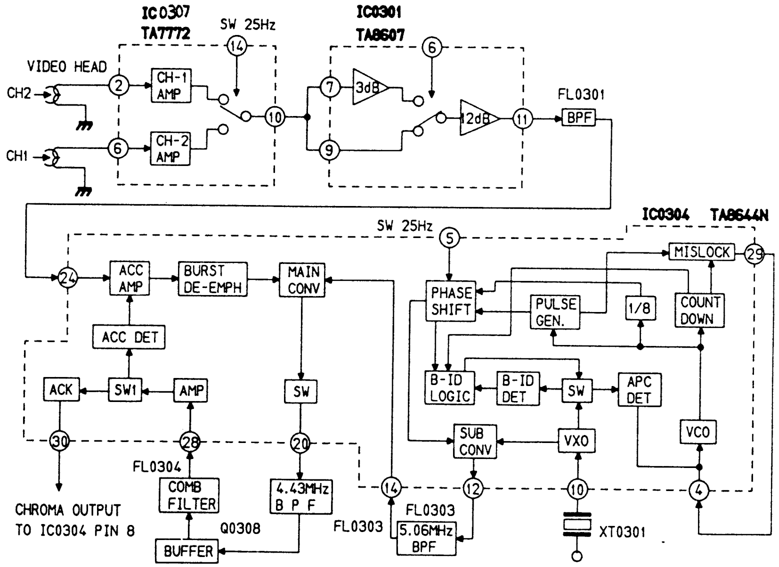
•Luminance Palyback Process


VIDEO HEADS
IC0307
SW 25Hz
IC0301
HPF+EQ
PB AMO
PB AMP
CH2
CH1
TA7772
SP
EP
12dB
6dB
EQ
AGC
AGC DET
BUFFER
D.O.C
TA8607
COMPRESS 1/2fH
Q0304
BUFFER
FL0302
LPF
IC0303 TA8605
FM DEM
DLIM
HPF
LPF
20dB
VR0302
IC0302 TA8606
CLAMP
LIM
LIM
DET
AP CTL
N
D
Y/C MIX
VIDEO OUT
TO RF CON JACK
Δ7
6dB
CLAMP
HPF
LIM
LPF
S/H
CCD
CLAMP
CLOCK
VR0301
IC0305 MS6965-3RS

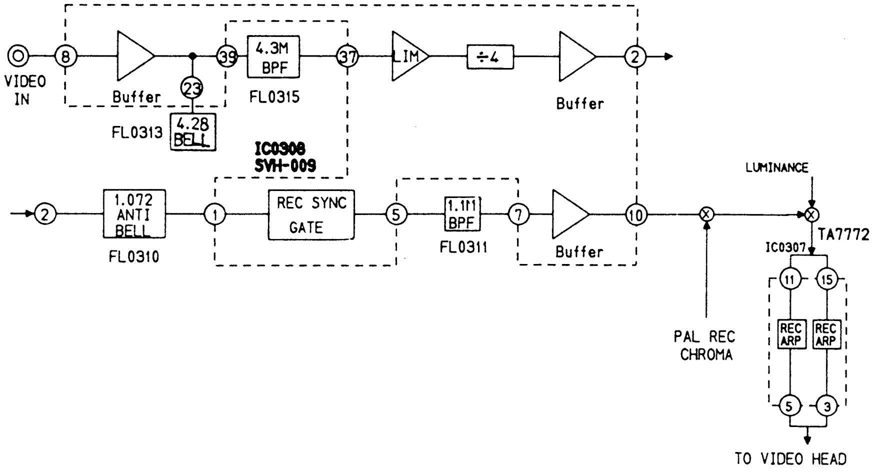
•PAL Chrominance Record Process


FL0303
Q0308
IC0304 TA8644N
4.43MHz BPF
BUFFER
VIDEO IN
SW3
SW1
ACC DET
ACC AMP
SW25Hz
C-SYNC
B-ID DET
SW2
BURST EMPH
MISLOCK
PULSE GEN.
PHASE SHIFT
B-ID LOGIC
LUMINANCE
FL0303
Q0307
MAIN CONV
ACK
1.2MHz LPF
BUFFER
TA7772
IC0307
HD
FH
COUNT DOWN
1/8
APC DET
SW
ACK DET
AFC DET
VCO
VXO
SUB CONV
REC ARP
REC ARP
XT0301
FL0303
5.06MHz BPF
TO VIDEO HEAD

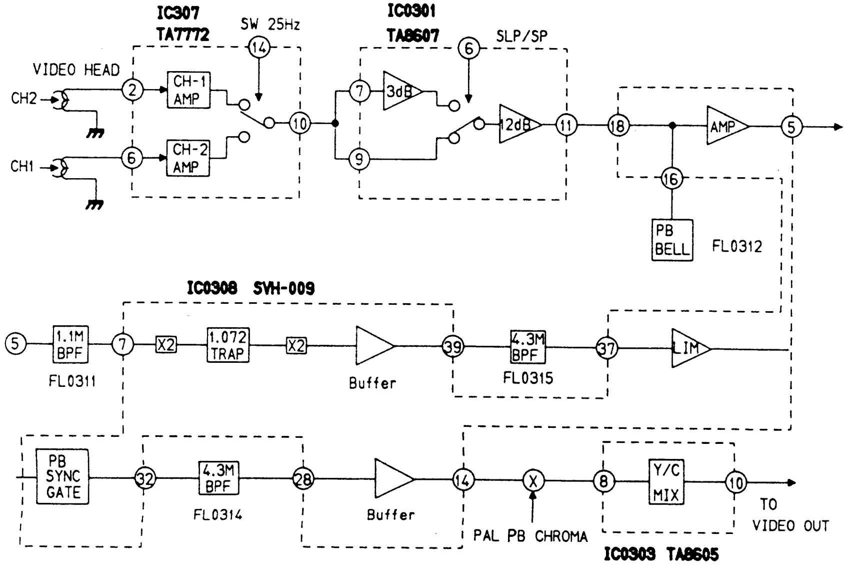
•PAL Chrominance Playback Process


IC0307 TA7772
SW 25Hz
IC0301 TA8607
VIDEO HEAD
CH2
CH1
CH-1 AMP
CH-2 AMP
3dB
12dB
FL0301
BPF
IC0304 TA8644N
SW 25Hz
MISLOCK
ACC AMP
BURST DE-EMPH
MAIN CONV
PHASE SHIFT
PULSE GEN.
1/8
COUNT DOWN
ACC DET
ACK
SW1
AMP
SW
B-ID LOGIC
B-ID DET
SW
APC DET
SUB CONV
VXO
VCO
FL0304
COMB FILTER
4.43MHz B P F
CHROMA OUTPUT TO IC0304 PIN 8
Q0308
BUFFER
FL0303
FL0303
5.06MHz BPF
XT0301

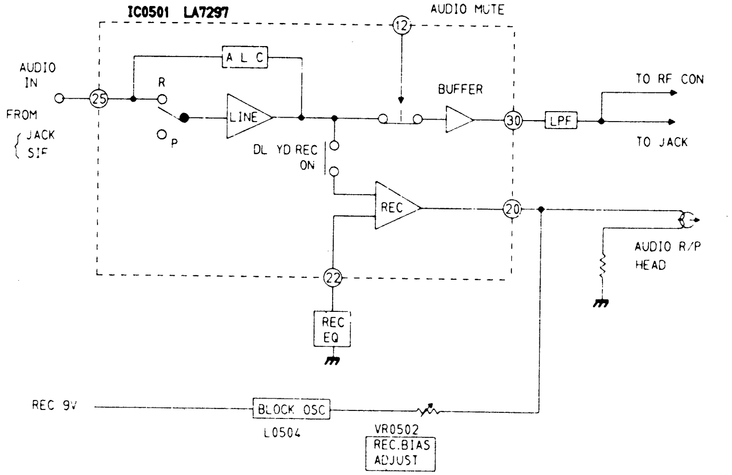
•SECAM Chrominance Record Process


VIDEO IN
8
Buffer
23
FL0313
4.28 BELL
39
4.3M BPF
FL0315
37
LIM
÷4
Buffer
2
IC0308 SVH-009
2
1.072 ANTI BELL
FL0310
1
REC SYNC GATE
5
1.1M BPF
FL0311
7
Buffer
10
LUMINANCE
TA7772
IC0307
11
15
REC ARP
REC ARP
5
3
PAL REC CHROMA
TO VIDEO HEAD

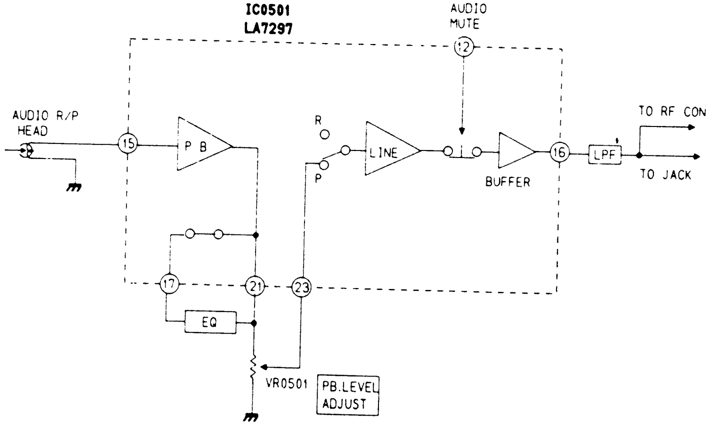
•SECAM Chrominance Playback Process


IC307 TA7772
SW 25Hz
14
VIDEO HEAD
CH2
CH1
2
CH-1 AMP
6
CH-2 AMP
10
IC0301 TA8607
6
SLP/SP
7
3dB
9
12dB
11
18
AMP
5
16
PB BELL
FL0312
IC0308 SVH-009
5
1.1M BPF
FL0311
7
X2
1.072 TRAP
X2
Buffer
39
4.3M BPF
FL0315
37
LIM
PB SYNC GATE
32
4.3M BPF
FL0314
28
Buffer
14
PAL PB CHROMA
8
Y/C MIX
10
TO VIDEO OUT
IC0303 TA8605

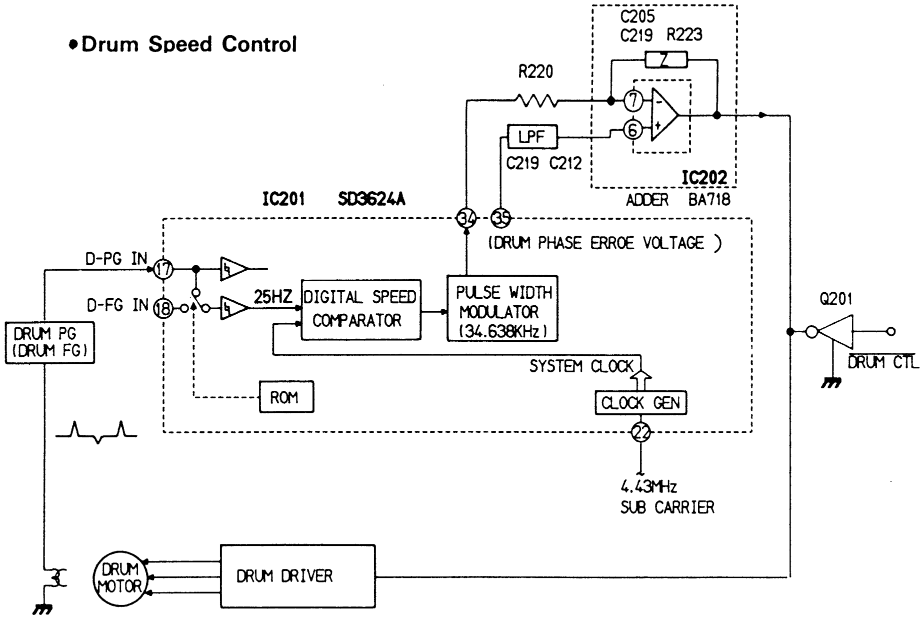
• Audio Record Process


IC0501 LA7297
AUDIO MUTE
12
AUDIO IN
25
FROM JACK SIF
R
P
A L C
LINE
DL YD REC ON
BUFFER
30
LPF
TO RF CON
TO JACK
REC
20
22
REC EQ
AUDIO R/P HEAD
REC 9V
BLOCK OSC
L0504
VR0502
REC.BIAS ADJUST

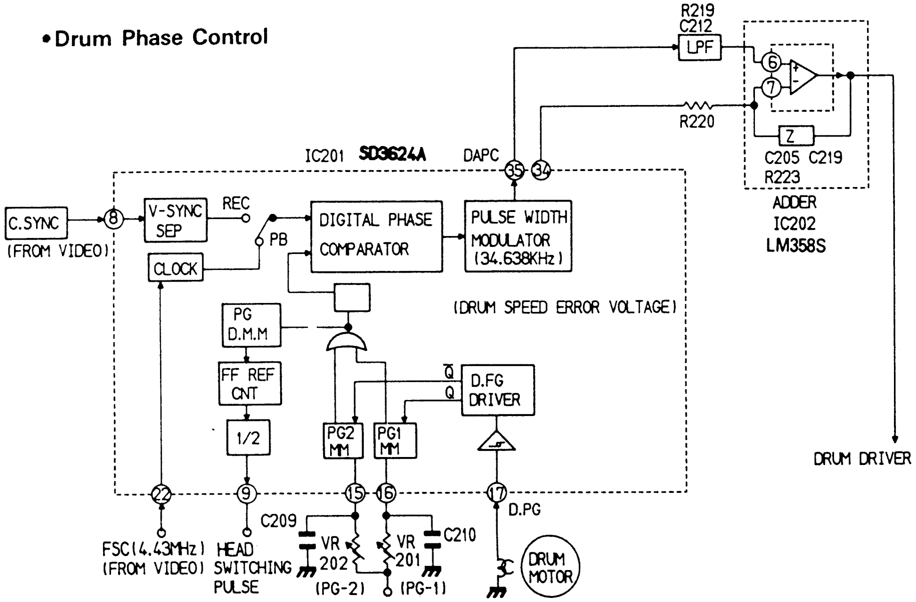
• Audio Playback Process


IC0501 LA7297
AUDIO MUTE
12
AUDIO R/P HEAD
15
P B
R
P
LINE
BUFFER
16
LPF
TO RF CON
TO JACK
17
21
23
EQ
VR0501
PB.LEVEL ADJUST

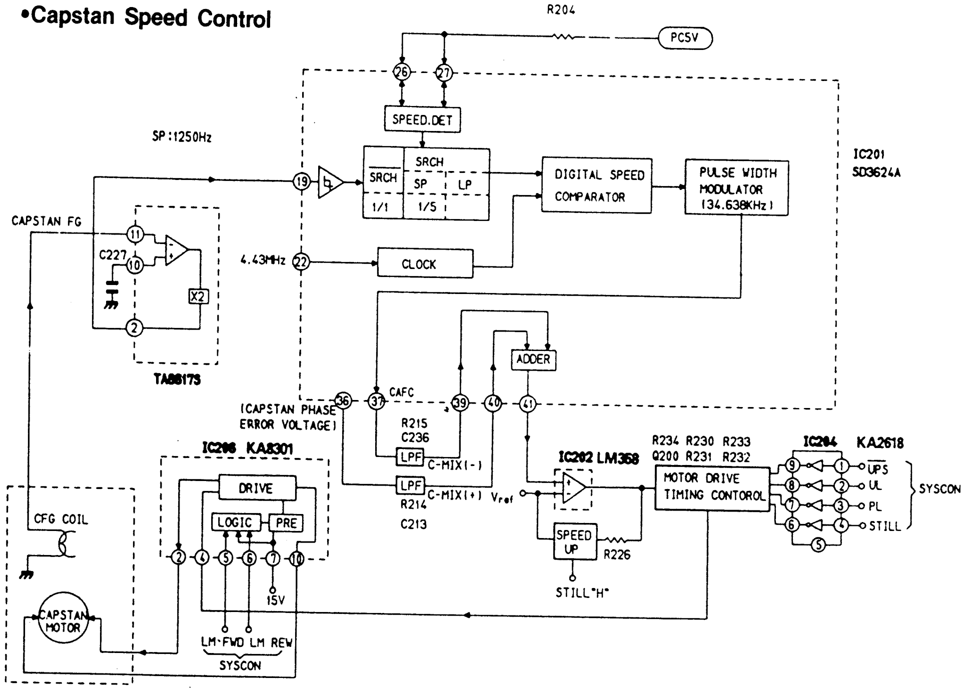
•Drum Speed Control


C205
C219 R223
Z
R220
7
6
LPF
C219 C212
IC202
ADDER BA718
IC201 SD3624A
34
35
(DRUM PHASE ERROE VOLTAGE)
D-PG IN
17
D-FG IN
18
25HZ
DIGITAL SPEED
COMPARATOR
PULSE WIDTH
MODULATOR
(34.638KHz)
Q201
DRUM PG
(DRUM FG)
SYSTEM CLOCK
CLOCK GEN
ROM
22
4.43MHz
SUB CARRIER
DRUM CTL
DRUM
MOTOR
DRUM DRIVER

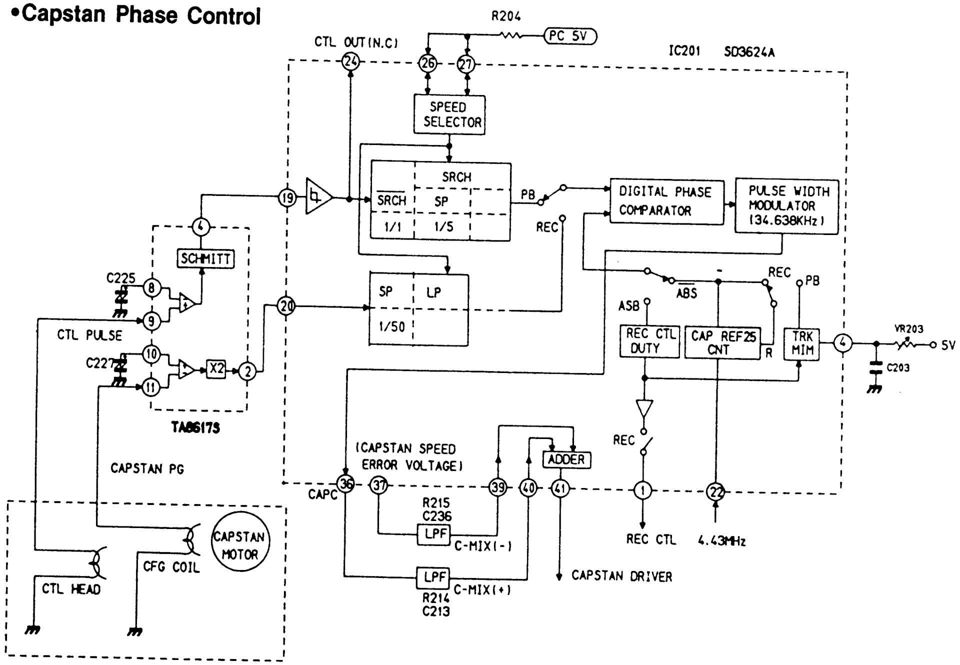
•Drum Phase Control

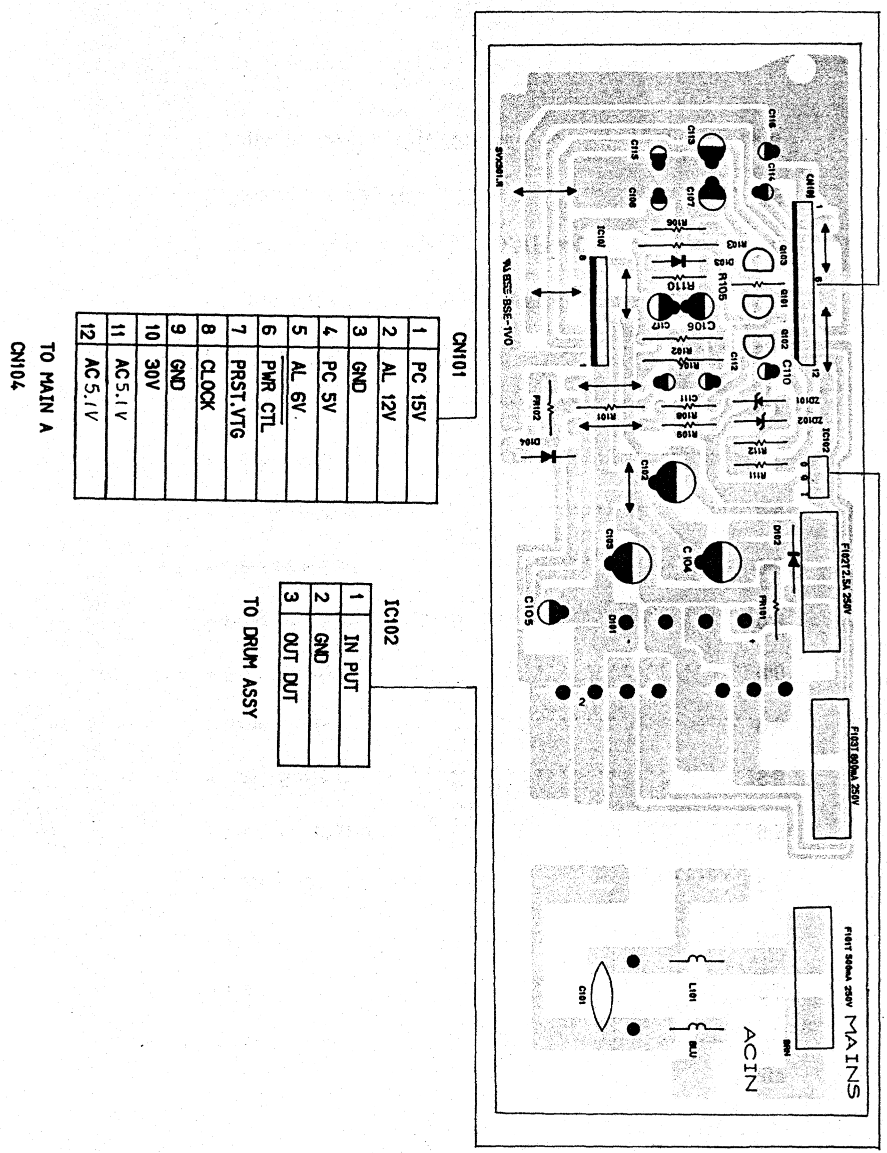

R219
C212
LPF
6
7
R220
Z
C205 C219
R223
ADDER
IC202
LM358S
IC201 SD3624A
DAPC
35
34
C.SYNC
(FROM VIDEO)
8
V-SYNC
SEP
REC
PB
CLOCK
DIGITAL PHASE
COMPARATOR
PULSE WIDTH
MODULATOR
(34.638KHz)
(DRUM SPEED ERROR VOLTAGE)
PG
D.M.M
FF REF
CNT
1/2
PG2
MM
PG1
MM
Q̄
Q
D.FG
DRIVER
22
9
15
16
17
D.PG
C209
VR
202
VR
201
C210
FSC(4.43MHz)
(FROM VIDEO)
HEAD
SWITCHING
PULSE
(PG-2)
(PG-1)
DRUM
MOTOR
DRUM DRIVER

•Capstan Speed Control


R204
PC5V
26
27
SPEED.DET
SP:1250Hz
19
SRCH
SRCH
SP
LP
1/1
1/5
DIGITAL SPEED
COMPARATOR
PULSE WIDTH
MODULATOR
(34.638KHz)
IC201
SD3624A
CAPSTAN FG
11
10
C227
X2
2
TA8617S
4.43MHz
22
CLOCK
ADDER
(CAPSTAN PHASE
ERROR VOLTAGE)
36
37
CAFC
39
40
41
R215
C236
LPF
C-MIX(-)
LPF
C-MIX(+)
R214
C213
Vref
IC206 KA8301
DRIVE
LOGIC
PRE
2
4
5
6
7
10
15V
IC202 LM358
SPEED
UP
R226
STILL"H"
R234 R230 R233
Q200 R231 R232
MOTOR DRIVE
TIMING CONTOROL
IC204 KA2618
9
8
7
6
1
2
3
4
5
UPS
UL
PL
STILL
SYSCON
CFG COIL
CAPSTAN
MOTOR
LM-FWD LM REW
SYSCON

•Capstan Phase Control


R204
PC 5V
CTL OUT(N.C)
24
26
27
IC201 SD3624A
SPEED
SELECTOR
19
SRCH
SRCH
SP
LP
1/1
1/5
PB
REC
DIGITAL PHASE
COMPARATOR
PULSE WIDTH
MODULATOR
(34.638KHz)
4
SCHMITT
C225
8
9
CTL PULSE
C227
10
11
X2
2
TA8617S
20
SP
LP
1/50
ABS
REC
PB
ASB
REC CTL
DUTY
CAP REF25
CNT
R
TRK
MIM
4
VR203
5V
C203
REC
CAPSTAN PG
(CAPSTAN SPEED
ERROR VOLTAGE)
ADDER
CAPC
36
37
39
40
41
1
22
R215
C236
LPF
C-MIX(-)
LPF
C-MIX(+)
R214
C213
REC CTL
4.43MHz
CAPSTAN DRIVER
CAPSTAN
MOTOR
CTL HEAD
CFG COIL


CN101
1 PC 15V
2 AL 12V
3 GND
4 PC 5V
5 AL 6V
6 PWR CTL
7 PRST.VTG
8 CLOCK
9 GND
10 30V
11 AC5.1V
12 AC5.1V
TO MAIN A
CN104
IC102
1 IN PUT
2 GND
3 OUT DUT
TO DRUM ASSY
MAINS
ACIN

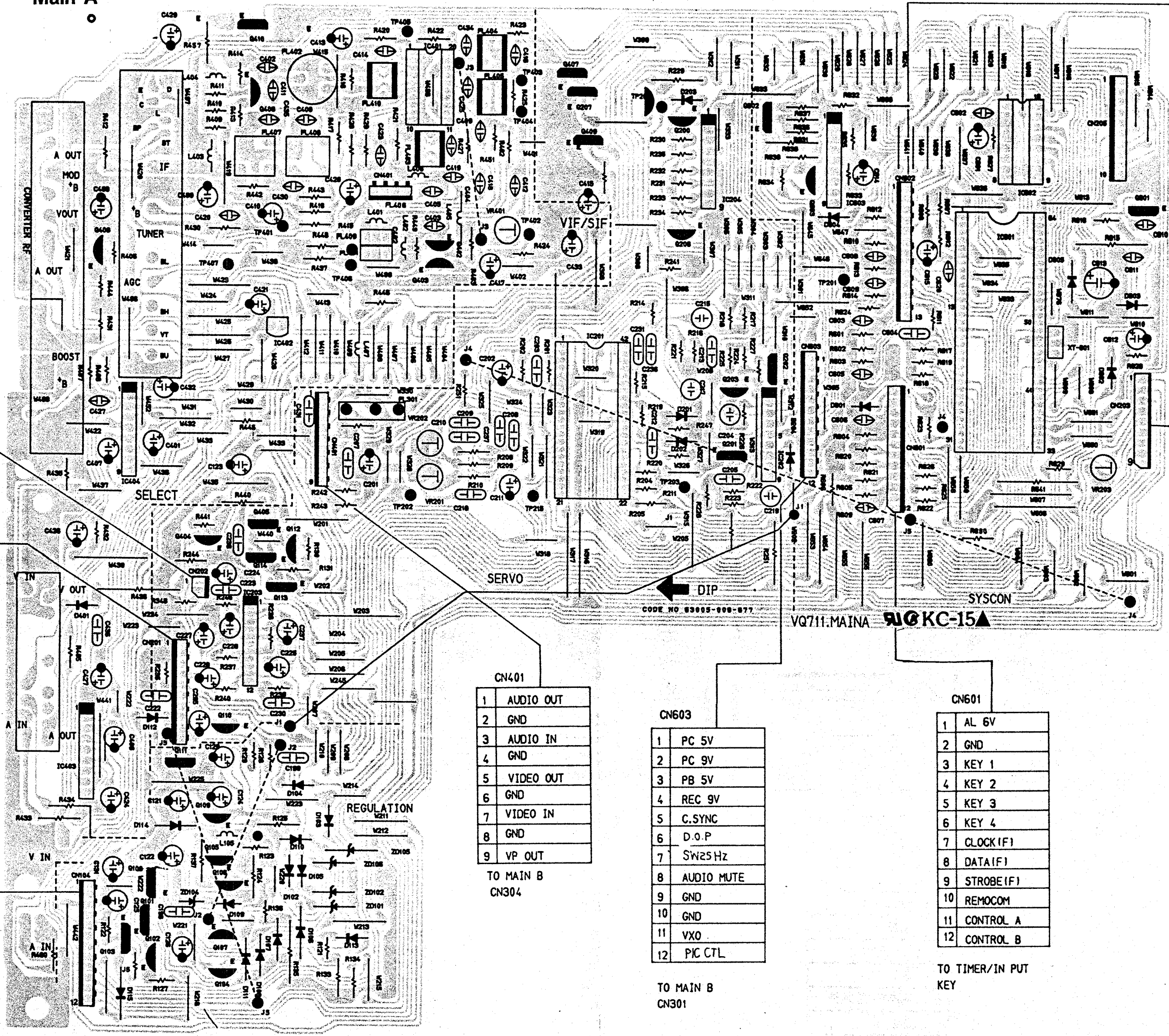
• Regulator

---

9. CIRCUIT BOARD

	Page
• Regulator	9-2
• Main A	9-3
• Main B	9-4
• Audio/Control Head	9-5
• Loading Motor	9-5
• Reel Sensor	9-5
• Start Sensor	9-5
• End Sensor	9-6
• Program Switch	9-6
• Cassette Led	9-6
• SIF-Converter	9-6
• Deck Joint	9-7
• Pre-Amp	9-7
• Remote Control	9-7
• Timer/Input Key (VQ-720.VR-4000)	9-8
• Function Switch (VQ-720.VR-4000)	9-8
• Timer/Input Key (VQ-721)	9-8
• Function Switch (VQ-721)	9-8

Main A


CONVERTER RF
A OUT
MOD
VOUT
A OUT
BOOST
TUNER
IF
AGC
SELECT
VIF/SIF
SERVO
DIP
SYSCON
REGULATION
V IN
V OUT
A IN
A OUT
V IN
A IN
CODE NO
VQ711.MAINA
KC-15

CN202

1	CONTROL PULSE
2	GND

TO AUDIO/CONTROL HEAD CN003

CN201

10	PC 15V
9	PC 15V
8	CM DRIVE
7	CAP FG
6	DM DRIVE
5	D.PG
4	DM CTL
3	AL 5.3V
2	GND
1	GND

TO DECK JOINT CN204

CN104

1	PC 15V
2	AL 12V
3	GND
4	PC 5V
5	AL 6V
6	PWR CTL
7	PRST VTG
8	CLOCK
9	GND
10	30V
11	AC 5.1V
12	AC 5.1V

TO REGULATOR CN101

CN401

1	AUDIO OUT
2	GND
3	AUDIO IN
4	GND
5	VIDEO OUT
6	GND
7	VIDEO IN
8	GND
9	VP OUT

TO MAIN B CN304

CN603

1	PC 5V
2	PC 9V
3	PB 5V
4	REC 9V
5	C.SYNC
6	D.O.P
7	SW25Hz
8	AUDIO MUTE
9	GND
10	GND
11	VXO
12	PIC CTL

TO MAIN B CN301

CN601

1	AL 6V
2	GND
3	KEY 1
4	KEY 2
5	KEY 3
6	KEY 4
7	CLOCK(F)
8	DATA(F)
9	STROBE(F)
10	REMOCOM
11	CONTROL A
12	CONTROL B

TO TIMER/IN PUT KEY

CN602

1	CM FWD
2	CM REV
3	LM REV
4	LM FWD
5	T.REEL
6	GND
7	REC SAF
8	START SENSR
9	END SENSR
10	CST IN SW
11	PRG SW A
12	PRG SW B
13	PRG SW C

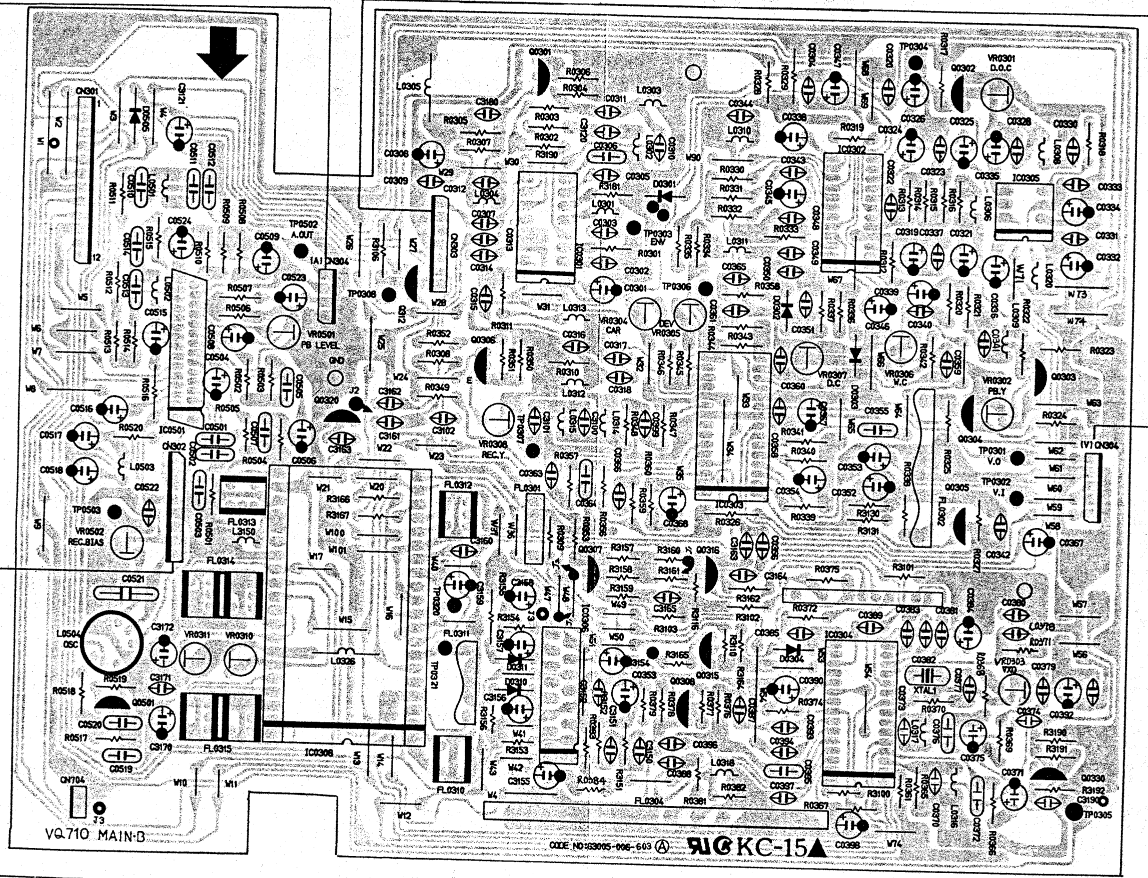
TO MOTOR DRIVE CN205

CN203

1	AC 5.1V
2	AC 5.1V
3	30V
4	GND
5	TRACKING
6	PICTURE CTL
7	V-LOCK
8	PC 5V
9	SELECT

TO TIMER/INPUT KEY

•Main B



CN304(A)

1	AUDIO OUT
2	GND
3	AUDIO IN
4	GND

TO MAIN A
CN401

CN301

1	PC 5V
2	PC 9V
3	PB 5V
4	REC 9V
5	C.SYNC
6	D.O.P
7	SW 25Hz
8	AUDIO MUTE
9	GND
10	GND
11	VXO
12	P.C

TO MAIN A
CN603

CN303

1	SW 25Hz
2	REC 8V
3	PB 5V
4	GND
5	REC FM
6	GND
7	PB FM

TO PRE AMP

CN 304(V)

1	VIDEO OUT
2	GND
3	VIDEO IN
4	GND
5	V-LOCK

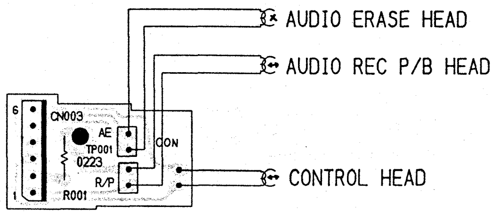
TO MAIN A
CN401

CN302

1	R/P(-)
2	GND
3	GND
4	R/P(+)
5	GND
6	AUDIO ERASE
7	GND
8	FULL ERASE

TO FULL ERASER
CN002
TO AUDIO/CONTROL
CN003

•Audio/Control Head

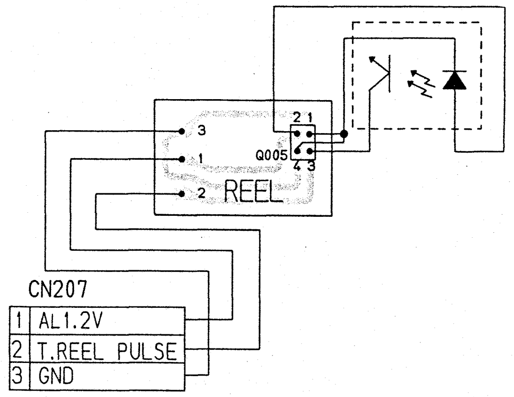

AUDIO ERASE HEAD
AUDIO REC P/B HEAD
CONTROL HEAD
6
1
CN003
AE
TP001
0223
R/P
R001
CON

CN003

1	AUDIO R/P (-)
2	AUDIO R/P (+)
3	GND
4	CONTROL
5	GND
6	AUDIO ERASE

TO
MAIN
CN202
CN302

•Reel Sensor

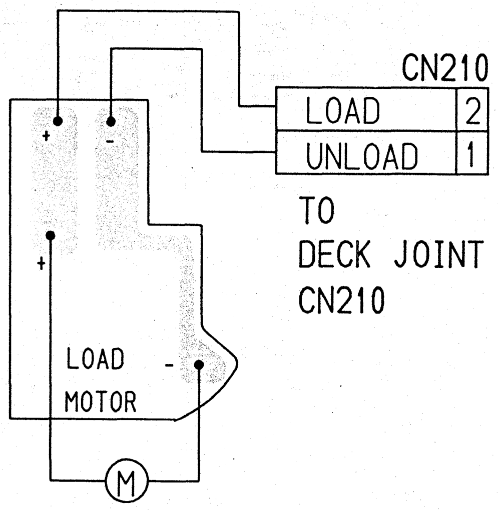

3
1
2
2 1
4 3
Q005
REEL

CN207

1	AL1.2V
2	T.REEL PULSE
3	GND

TO
DECK JOINT
CN207

•Loading Motor

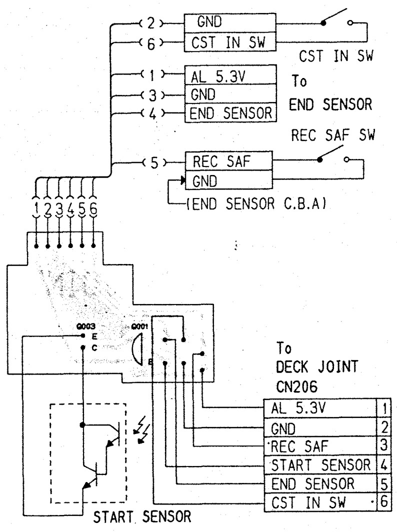

+
-
+
-
LOAD
MOTOR
M

CN210

LOAD	2
UNLOAD	1

TO
DECK JOINT
CN210

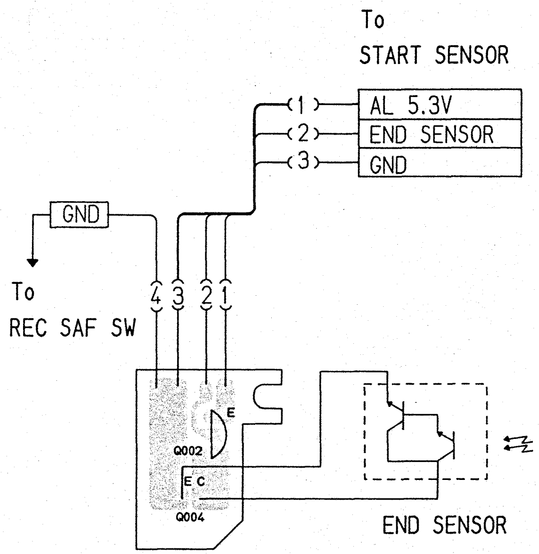
•Start Sensor


2
6
1
3
4
5
GND
CST IN SW
AL 5.3V
GND
END SENSOR
REC SAF
GND
CST IN SW
To
END SENSOR
REC SAF SW
(END SENSOR C.B.A)
1 2 3 4 5 6
Q003
E
C
Q001
E
START SENSOR

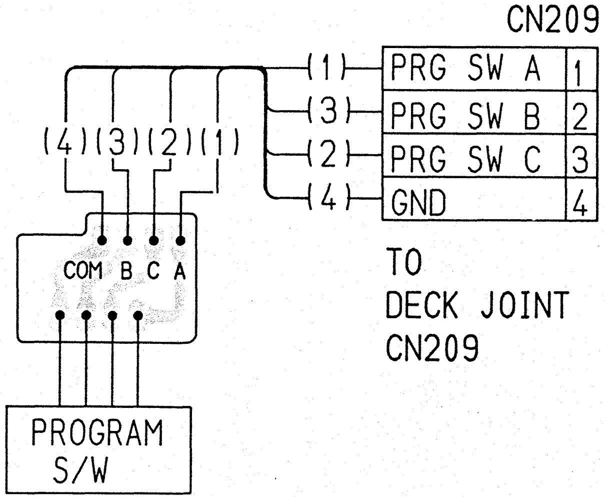
To
DECK JOINT
CN206

AL 5.3V	1
GND	2
REC SAF	3
START SENSOR	4
END SENSOR	5
CST IN SW	6

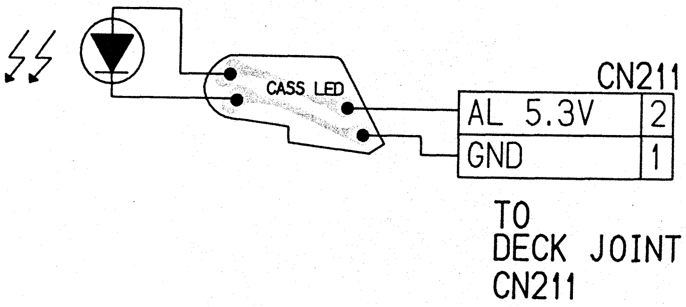
•End Sensor


To
START SENSOR
(1) AL 5.3V
(2) END SENSOR
(3) GND
GND
To
REC SAF SW
4 3 2 1
E
Q002
E C
Q004
END SENSOR

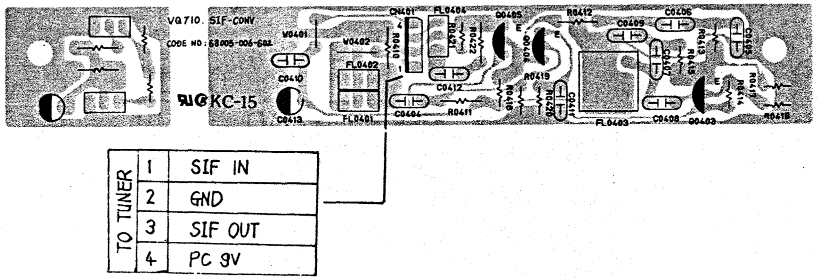
•Program Switch


CN209
(1) PRG SW A 1
(3) PRG SW B 2
(2) PRG SW C 3
(4) GND 4
(4) (3) (2) (1)
COM B C A
PROGRAM
S/W
TO
DECK JOINT
CN209

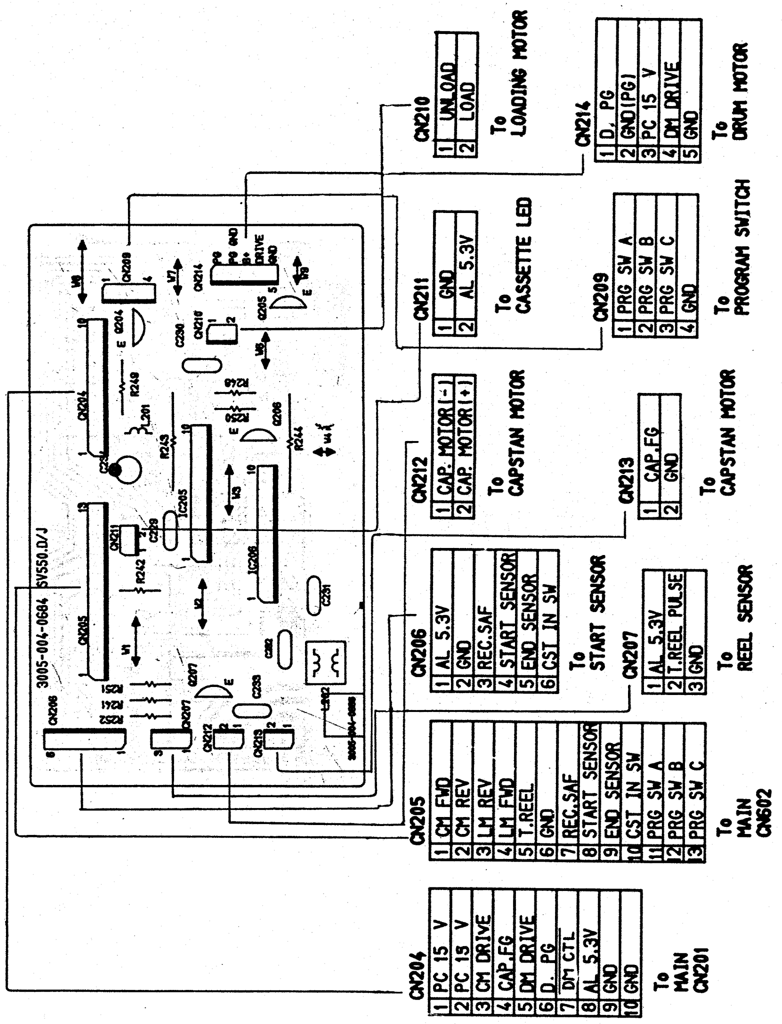
•Cassette Led


CASS LED
CN211
AL 5.3V 2
GND 1
TO
DECK JOINT
CN211

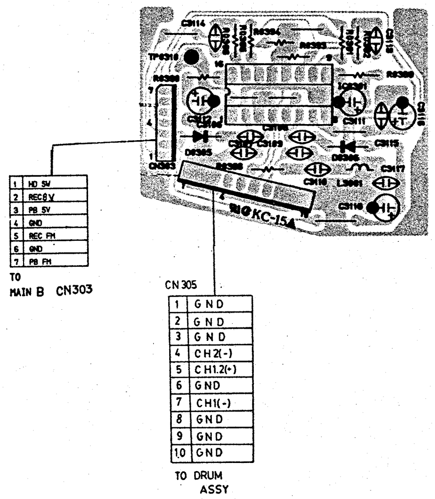
•SIF-Conv


VQ710. SIF-CONV
KC-15
TO TUNER
1 SIF IN
2 GND
3 SIF OUT
4 PC 9V

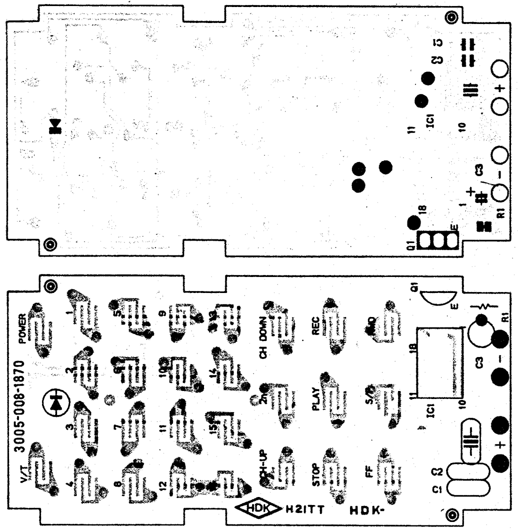
•Deck Joint


3005-004-0684 SV550.D/J
CN210
1 UNLOAD
2 LOAD
To LOADING MOTOR
CN214
1 D. PG
2 GND(PG)
3 PC 15 V
4 DM DRIVE
5 GND
To DRUM MOTOR
CN211
1 GND
2 AL 5.3V
To CASSETTE LED
CN209
1 PRG SW A
2 PRG SW B
3 PRG SW C
4 GND
To PROGRAM SWITCH
CN212
1 CAP. MOTOR(-)
2 CAP. MOTOR(+)
To CAPSTAN MOTOR
CN213
1 CAP.FG
2 GND
To CAPSTAN MOTOR
CN206
1 AL 5.3V
2 GND
3 REC.SAF
4 START SENSOR
5 END SENSOR
6 CST IN SW
To START SENSOR
CN207
1 AL 5.3V
2 T.REEL PULSE
3 GND
To REEL SENSOR
CN205
1 CM FWD
2 CM REV
3 LM REV
4 LM FWD
5 T.REEL
6 GND
7 REC.SAF
8 START SENSOR
9 END SENSOR
10 CST IN SW
11 PRG SW A
12 PRG SW B
13 PRG SW C
To MAIN CN602
CN204
1 PC 15 V
2 PC 15 V
3 CM DRIVE
4 CAP.FG
5 DM DRIVE
6 D. PG
7 DM CTL
8 AL 5.3V
9 GND
10 GND
To MAIN CN201

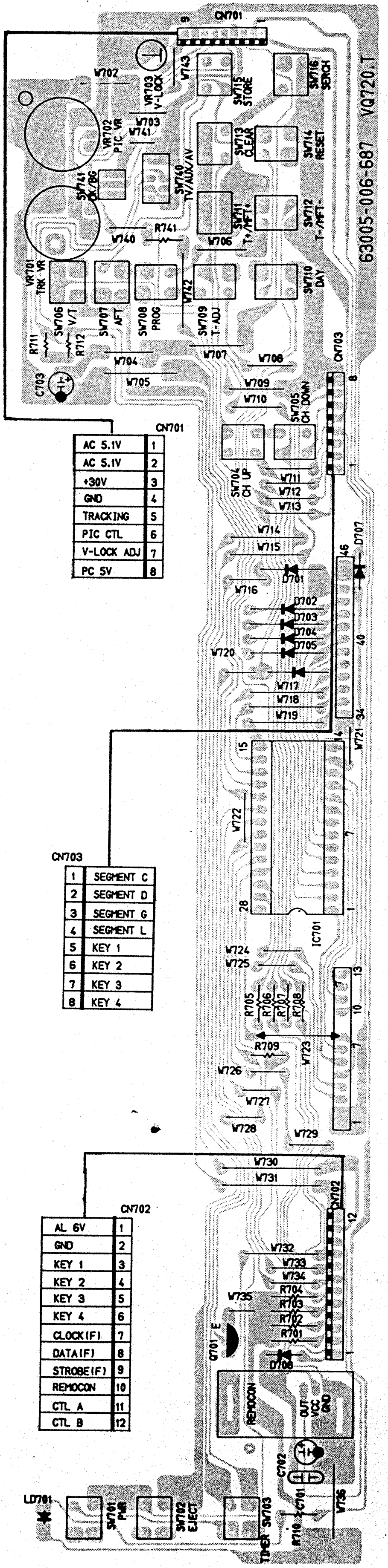
•Pre-Amp


KC-15A
1 HD SW
2 REC 5V
3 PB 5V
4 GND
5 REC FM
6 GND
7 PB FM
TO MAIN B CN303
CN305
1 GND
2 GND
3 GND
4 CH2(-)
5 CH1.2(+)
6 GND
7 CH1(-)
8 GND
9 GND
10 GND
TO DRUM ASSY

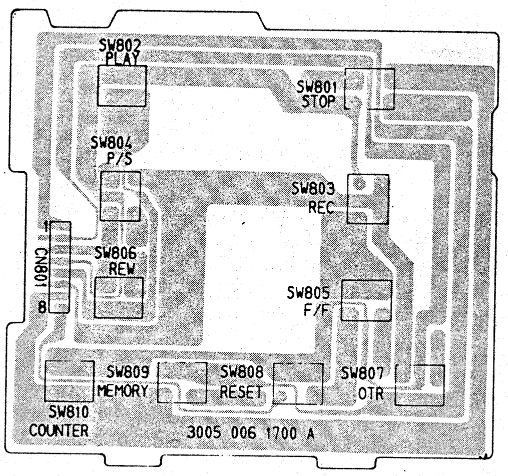
•Remote Control


IC1
Q1
R1
C1
C2
C3
POWER
CH DOWN
REC
PLAY
STOP
FF
CH-UP
V/T 3005-008-1870
HDK H2ITT
HDK-

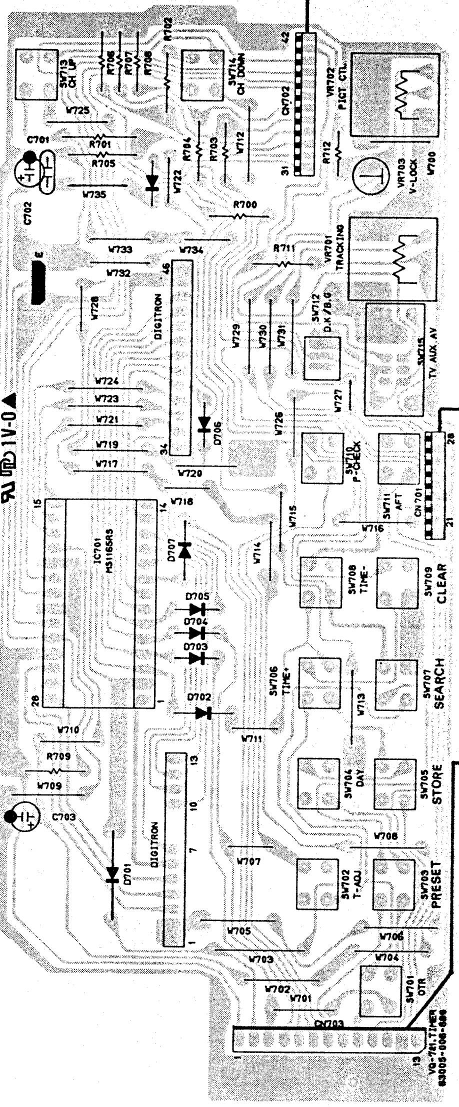
• Timer/Input Key (VQ-720.VR-4000)


CN701
VQ720.T
63005-006-687
SW716 SERCH
SW715 STORE
SW714 RESET
SW713 CLEAR
SW712 T-/MFT-
SW711 T+/MFT+
SW710 DAY
SW709 T-ADJ
SW708 PROG
SW707 AFT
SW706 V/T
SW705 CH DOWN
SW704 CH UP
SW760 TV/AUX/AV
SW741 BK/BG
VR701 TRK VR
VR702 PIC VR
VR703 V-LOCK
R741
R711
R712
C703
CN703
D701
D702
D703
D704
D705
D707
IC701
R705
R706
R707
R708
R709
CN701
AC 5.1V 1
AC 5.1V 2
+30V 3
GND 4
TRACKING 5
PIC CTL 6
V-LOCK ADJ 7
PC 5V 8
CN703
1 SEGMENT C
2 SEGMENT D
3 SEGMENT G
4 SEGMENT L
5 KEY 1
6 KEY 2
7 KEY 3
8 KEY 4
CN702
AL 6V 1
GND 2
KEY 1 3
KEY 2 4
KEY 3 5
KEY 4 6
CLOCK(F) 7
DATA(F) 8
STROBE(F) 9
REMOCON 10
CTL A 11
CTL B 12
Q701
D706
R701
R702
R703
R704
REMOCON
OUT VCC GND
C702
C701
R710
LD701
SW701 PWR
SW702 EJECT
SW703 TIMER

• Function Switch (VQ-720.VR-4000)


SW802 PLAY
SW801 STOP
SW804 P/S
SW803 REC
CN801
SW806 REW
SW805 F/F
SW809 MEMORY
SW808 RESET
SW807 OTR
SW810 COUNTER
3005 006 1700 A

• Timer/Input Key (VQ-721)



SW713 CH UP
SW714 CH DOWN
CN702
VR702 PICT CTL
VR703 V-LOCK
VR701 TRACKING
DIGITRON
SW712 D.K/B.G
SW715 TV AUX AV
SW710 P-CHECK
SW711 AFT
CN701
IC701 M3116SH3
SW708 TIME-
SW709 CLEAR
SW706 TIME+
SW707 SEARCH
SW704 DAY
SW705 STORE
SW702 T-ADJ
SW703 PRESET
SW701 OTR
CN703
VQ-721 TIMER 63005-006-684
1V-0▲

CN702

1	AL 6V
2	GND
3	KEY 1
4	KEY 2
5	KEY 3
6	KEY 4
7	CLOCK(F)
8	DATA(F)
9	STROBE(F)
10	REMOCOM
11	CONTROL A
12	CONTROL B

TO SYSTEM/CONTROL
CN601

CN701

1	AC 5.1V
2	AC 5.1V
3	30V
4	GND
5	TRACKING
6	PIC CTL
7	V-LOCK
8	PC 5V

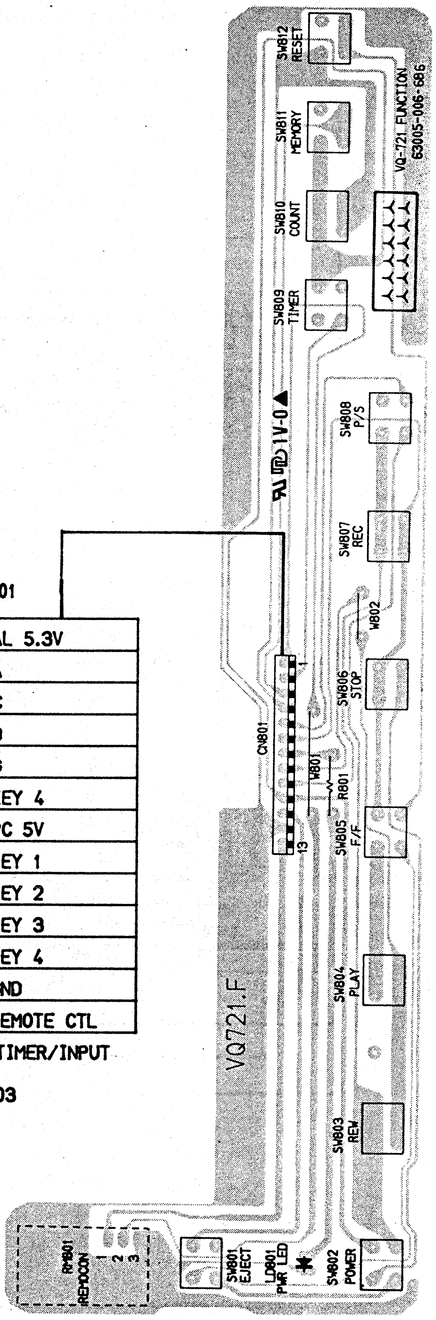
TO SERVO
CN203

CN703

1	AL 5.3V
2	A
3	C
4	D
5	G
6	KEY 4
7	PC 5V
8	KEY 1
9	KEY 2
10	KEY 3
11	KEY 4
12	GND
13	REMOTE CTL

TO FUNCTION
CN801

• Function Switch (VQ-721).



SW812 RESET
SW811 MEMORY
SW810 COUNT
SW809 TIMER
VQ-721 FUNCTION 63005-006-686
SW808 P/S
SW807 REC
W802
SW806 STOP
CN801
W801
R801
SW805 F/F
SW804 PLAY
SW803 REW
VQ721.F
1V-0▲
RM801 REMOCON
SW801 EJECT
LD801 PWR LED
SW802 POWER

CN801

1	AL 5.3V
2	A
3	C
4	D
5	G
6	KEY 4
7	PC 5V
8	KEY 1
9	KEY 2
10	KEY 3
11	KEY 4
12	GND
13	REMOTE CTL

TO TIMER/INPUT
KEY
CN703

10. SCHEMATICS

Page

- Regulator 10-2
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- Servo 10-6
- Luminance/Chrominance 10-8
- Audio 10-10
- Pre-Amp 10-11
- Tuner 10-11
- Timer/Input Key (VQ-720.VR-4000) 10-12
- Timer/Input Key (VQ-721) 10-12
- Function Switch (VQ-720.VR-4000) 10-13
- Function Switch (VQ-721) 10-13
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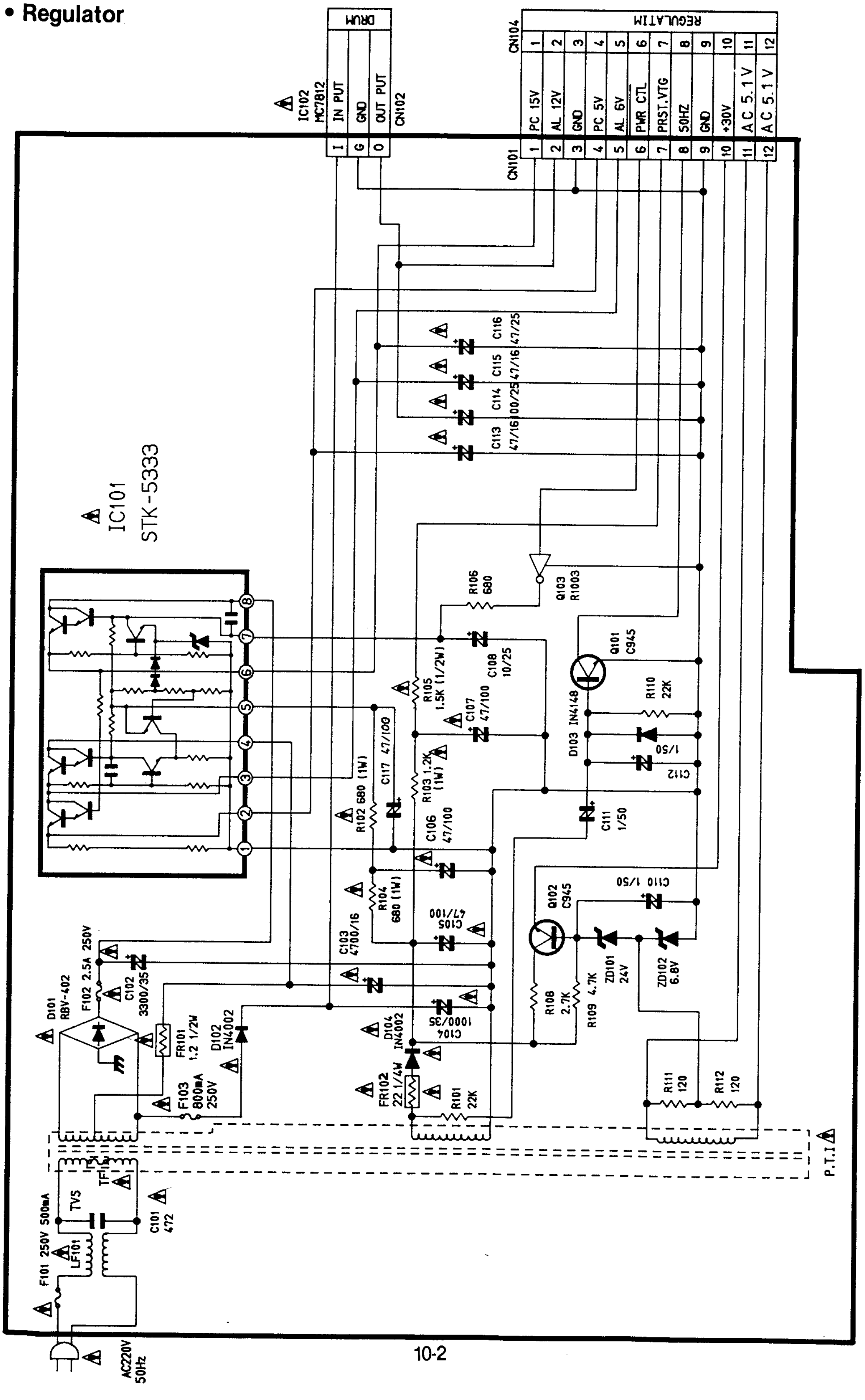
- SIF-Converter 10-13
- Deck Joint 10-14

• Regulator



IC102
MC7812
CN102
DRUM
I IN PUT
G GND
O OUT PUT
CN104
REGULATIM
CN101
1 PC 15V
2 AL 12V
3 GND
4 PC 5V
5 AL 6V
6 PWR CTL
7 PRST.VTG
8 50HZ
9 GND
10 +30V
11 A C 5.1 V
12 A C 5.1 V
IC101
STK-5333
C113 47/16
C114 100/25
C115 47/16
C116 47/25
R106 680
Q103 R1003
Q101 C945
R110 22K
D103 IN4148
C112 1/50
C108 10/25
R105 1.5K (1/2W)
C107 47/100
R103 1.2K (1W)
C117 47/100
R102 680 (1W)
C106 47/100
C111 1/50
C110 1/50
Q102 C945
ZD101 24V
ZD102 6.8V
R108 2.7K
R109 4.7K
R104 680 (1W)
C105 47/100
C103 4700/16
C104 1000/35
D104 IN4002
FR102 22 1/4W
R101 22K
R111 120
R112 120
P.T.I
D101 RBV-402
F102 2.5A 250V
C102 3300/35
FR101 1.2 1/2W
D102 IN4002
F103 800mA 250V
TF1
TVS
F101 250V 500mA
LF101
C101 472
AC220V 50Hz

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 101						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	0	0	0	0	0	0
PIN 2	5	5	5	5	5	5	5
PIN 3	6	6	6	6	6	6	6
PIN 4	10	9	9	9	9	9	9
PIN 5	21	21	21	21	21	21	21
PIN 6	15	15	15	15	15	15.5	15.5
PIN 7	17	16.5	16.5	16.5	16.5	16.5	16.5
PIN 8	22	21	22	21	21	21	21

Regulator C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 102						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
I	19	19	19	19	19	19	19
G	0	0	0	0	0	0	0
O	13	12.5	12.5	12.5	12.5	13	13

Regulator C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	STOP			REC			PLAY			REW			F. FWD			REV. S			FWD. S		
Tr No.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 101	0	5	1.2	0	5	1.2	0	5	1.2	0	5	1.2	0	5	1.2	0	5	2	0	5	2
Q 102	32	32	32.5	31	31	32	32	32	32.5	31	31.5	32	31.5	32	32.5	31.5	32	32.5	31.5	32	32.5
Q 103	0	16	0	0	16	0	0	16	0	0	16	0	0	16.5	0	0	16.5	0	0	16.5	0

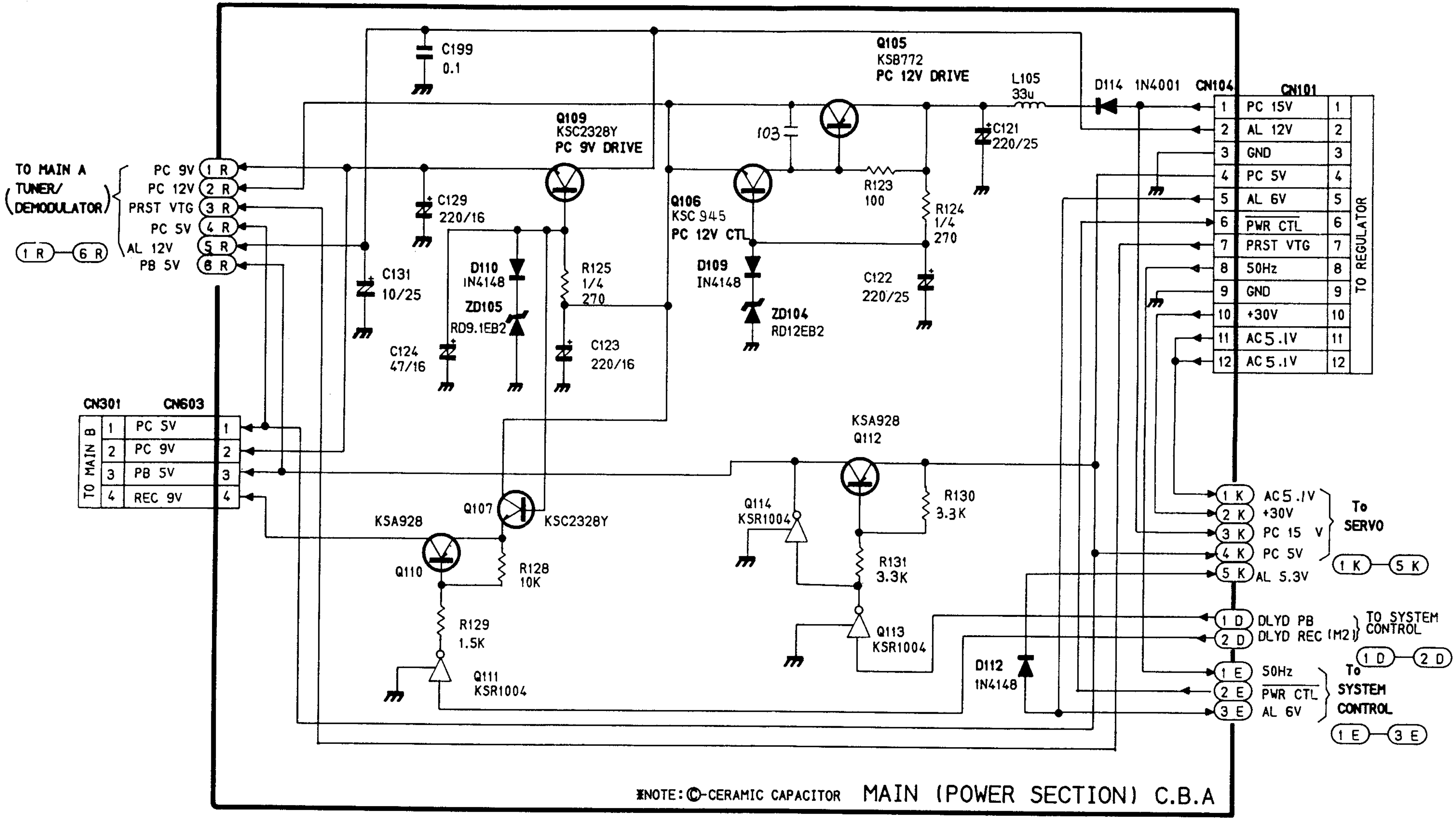
Regulator C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	STOP			REC			PLAY			REW			F. FWD			REV. S			FWD. S		
TR NO.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 105	15	12	15	15	12	15	15	12	15	15	12	15	15	12	15	15	12	15	15	12	15
Q 106	12	15	13	12	15	13	12	15	13	12	15	13	12	15	13	12	15	13	12	15	13
Q 107	9.2	12	10	4.2	12	10	4.2	12	10	4.2	12	10	9.2	12	10	9.2	12	10	9.2	12	10
Q 109	9	12.2	10	9	12.2	10	9	12.2	10	9	12.2	10	9	12.2	10	9	12.2	10	9	12.2	10
Q 110	9.2	0	9.2	9.2	9	8.6	9.2	0	9.2	9.2	0	9.2	9.2	0	9.2	9.2	0	9.2	9.2	0	9.2
Q 111	0	9.2	0	0	0	5	0	9.2	0	0	9.2	0	0	9.2	0	0	9.2	0	0	9.2	0
Q 112	5	0.2	4.6	5.	0.2	4.6	5.2	5	4.5	5	0.2	4.6	5	0.2	4.6	5	0.2	4.6	5	0.2	4.6
Q 113	0	4	0	0	4	0	0	0	5	0	4	0	0	4	0	0	0	5	0	0	5
Q 114	0	0.2	4	0	0.2	4	0	5	0	0	0.2	4	0	0.2	4	0	5	0	0	5	0

Main (Power) C.B.A

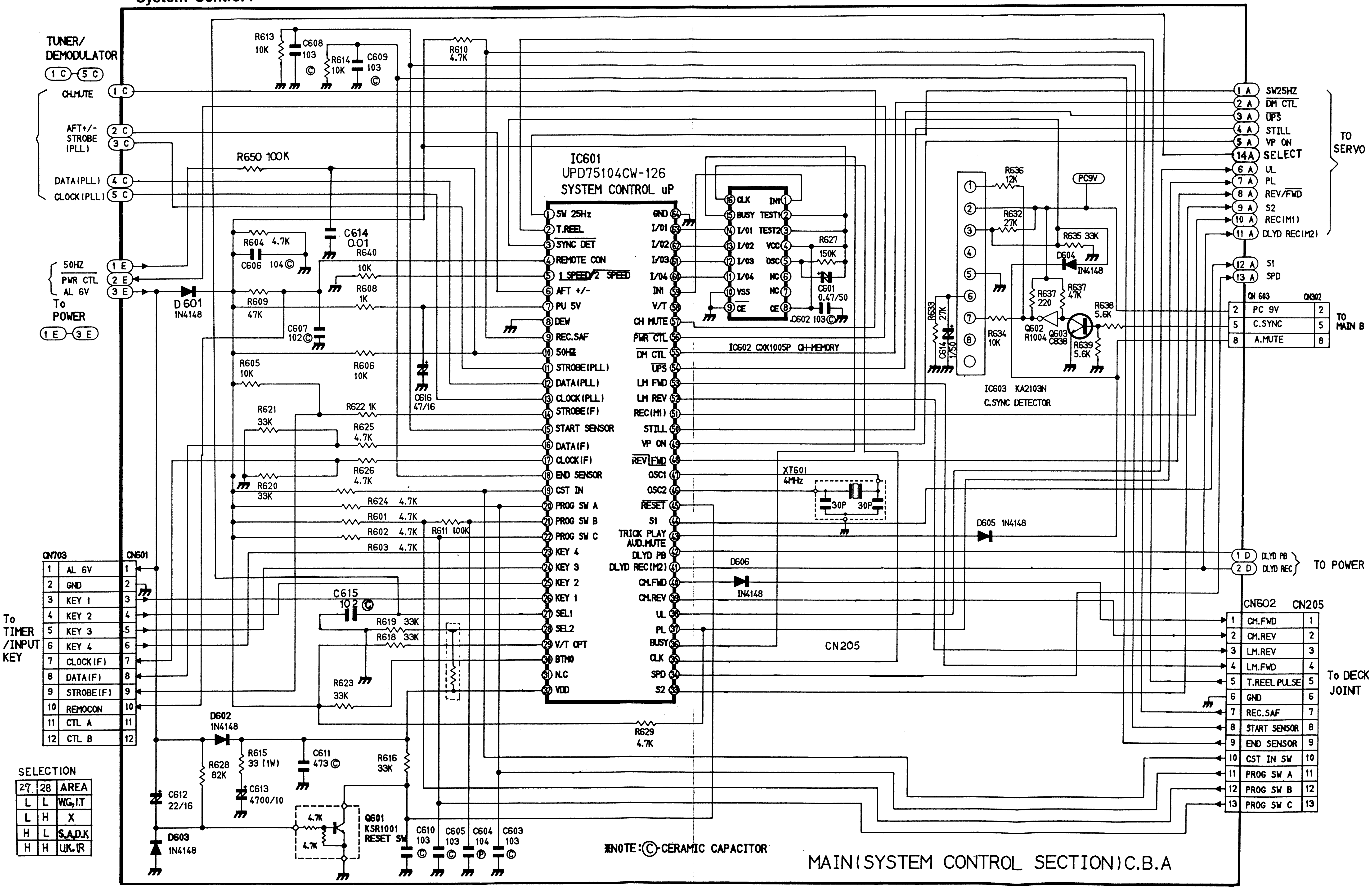
Power


C199
0.1
Q105
KSB772
PC 12V DRIVE
L105
33u
D114 1N4001
CN104
CN101
Q109
KSC2328Y
PC 9V DRIVE
103
C121
220/25
TO MAIN A
TUNER/
DEMODULATOR
PC 9V
PC 12V
PRST VTG
PC 5V
AL 12V
PB 5V
1 R
2 R
3 R
4 R
5 R
6 R
C129
220/16
R123
100
R124
1/4
270
Q106
KSC 945
PC 12V CTL
C131
10/25
D110
IN4148
ZD105
RD9.1EB2
R125
1/4
270
D109
IN4148
ZD104
RD12EB2
C122
220/25
C124
47/16
C123
220/16
PC 15V
AL 12V
GND
PC 5V
AL 6V
PWR CTL
PRST VTG
50Hz
GND
+30V
AC5.1V
AC5.1V
TO REGULATOR
CN301
CN603
TO MAIN B
PC 5V
PC 9V
PB 5V
REC 9V
KSA928
Q112
R130
3.3K
Q114
KSR1004
Q107
KSC2328Y
KSA928
Q110
R128
10K
R131
3.3K
1 K
2 K
3 K
4 K
5 K
AC5.1V
+30V
PC 15 V
PC 5V
AL 5.3V
To
SERVO
1 K
5 K
R129
1.5K
Q113
KSR1004
1 D
2 D
DLYD PB
DLYD REC (M2)
TO SYSTEM
CONTROL
1 D
2 D
Q111
KSR1004
D112
1N4148
1 E
2 E
3 E
50Hz
PWR CTL
AL 6V
To
SYSTEM
CONTROL
1 E
3 E

※NOTE: Ⓒ-CERAMIC CAPACITOR

MAIN (POWER SECTION) C.B.A

• System Control .


TUNER/
DEMODULATOR
1 C - 5 C
CH.MUTE
AFT+/-
STROBE (PLL)
DATA(PLL)
CLOCK(PLL)
50HZ
PWR CTL
AL 6V
To POWER
1 E - 3 E
D601 1N4148
R613 10K
C608 103
R614 10K
C609 103
R610 4.7K
R650 100K
C614 0.01
R604 4.7K
C606 104
R640 10K
R608 1K
R609 47K
C607 102
R605 10K
R606 10K
C616 47/16
R621 33K
R622 1K
R625 4.7K
R626 4.7K
R620 33K
R624 4.7K
R601 4.7K
R602 4.7K
R603 4.7K
R611 100K
IC601
UPD75104CW-126
SYSTEM CONTROL uP
SW 25Hz
T.REEL
SYNC DET
REMOTE CON
1 SPEED/2 SPEED
AFT +/-
PU 5V
DEW
REC.SAF
50HZ
STROBE(PLL)
DATA(PLL)
CLOCK(PLL)
STROBE(F)
START SENSOR
DATA(F)
CLOCK(F)
END SENSOR
CST IN
PROG SW A
PROG SW B
PROG SW C
KEY 4
KEY 3
KEY 2
KEY 1
SEL1
SEL2
V/T OPT
BTMO
N.C
VDD
GND
I/01
I/02
I/03
I/04
IN1
V/T
CH MUTE
PWR CTL
DM CTL
UP5
LM FWD
LM REV
REC(M1)
STILL
VP ON
REV/FWD
OSC1
OSC2
RESET
S1
TRICK PLAY AUD.MUTE
DLYD PB
DLYD REC(M2)
CM.FWD
CM.REV
UL
PL
BUSY
CLK
SPD
S2
IC602 CXK1005P CH-MEMORY
CLK IN1
BUSY TEST1
I/01 TEST2
I/02 VCC
I/03 OSC
I/04 NC
VSS NC
CE CE
R627 150K
C601 0.47/50
C602 103
XT601 4MHz
30P 30P
D605 1N4148
D606 1N4148
CN205
R636 12K
R632 27K
R635 33K
D604 1N4148
PC9V
R637 220
R637 47K
R638 5.6K
R633 27K
C614 1/50
R634 10K
Q602 R1004
Q603 C838
R639 5.6K
IC603 KA2103N
C.SYNC DETECTOR
CN 603
CN302
PC 9V
C.SYNC
A.MUTE
TO MAIN B
SW25HZ
DM CTL
UP5
STILL
VP ON
SELECT
UL
PL
REV/FWD
S2
REC(M1)
DLYD REC(M2)
S1
SPD
TO SERVO
DLYD PB
DLYD REC
TO POWER
CN602 CN205
CM.FWD
CM.REV
LM.REV
LM.FWD
T.REEL PULSE
GND
REC.SAF
START SENSOR
END SENSOR
CST IN SW
PROG SW A
PROG SW B
PROG SW C
To DECK JOINT
CN703
CN601
AL 6V
GND
KEY 1
KEY 2
KEY 3
KEY 4
CLOCK(F)
DATA(F)
STROBE(F)
REMOCON
CTL A
CTL B
To TIMER /INPUT KEY
C615 102
R619 33K
R618 33K
R623 33K
R629 4.7K
D602 1N4148
R628 82K
R615 33 (1W)
C613 4700/10
C611 473
R616 33K
C612 22/16
D603 1N4148
4.7K
4.7K
Q601 KSR1001 RESET SW
C610 103
C605 103
C604 104
C603 103
※NOTE: Ⓒ-CERAMIC CAPACITOR
MAIN(SYSTEM CONTROL SECTION)C.B.A

SELECTION

27	28	AREA
L	L	WG,IT
L	H	X
H	L	S,A,D,K
H	H	UK,IR

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 601						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	4.5	2.0	2.0	2.1	2.1	2.1	2.1
PIN 2	0	—	—	—	—	—	—
PIN 3	0	0	0	0	0	0	0
PIN 4	5	5	5	5	5	5	5
PIN 5	0	5.3	5.3	5.3	5.3	5.3	5.3
PIN 6	3.4	3.4	3.4	3.4	3.4	3.4	3.4
PIN 7	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 8	0	0	0	0	0	0	0
PIN 9	0	5	0	5	5	5	5
PIN 10	2.5	2.5	2.5	2.5	2.5	2.5	2.5
PIN 11	0	0	0	0	0	0	0
PIN 12	5	5	5	5	5	5	5
PIN 13	0	0	0	0	0	0	0
PIN 14	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PIN 15	0	0	0	0	0	0	0
PIN 16	0.6	0.6	0.6	0.6	0.6	0.6	0.6
PIN 17	5	5	5	5	5	5	5
PIN 18	0	0	0	0	0	0	0
PIN 19	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 20	0	5.1	5.1	5.1	5.1	0	5.1
PIN 21	4.6	0	0	0	0	4.8	0
PIN 22	0	5.1	5.1	0	0	5	5
PIN 23	0	0	0	0	0	0	0
PIN 24	0	0	0	0	0	0	0
PIN 25	0	0	0	0	0	0	0
PIN 26	0	0	0	0	0	0	0
PIN 27	5	5	5	5	5	5	5
PIN 28	0	0	0	0	0	0	0
PIN 29	5.1	5	5	5	5	5	5
PIN 30	5.1	5	5	5	5	5	5
PIN 31	0	0	0	0	0	0	0
PIN 32	5.1	5	5	5	5	5	5
PIN 33	0	0	0	5	5	5	5
PIN 34	0	0	0	0	0	0	0
PIN 35	5.1	5	5	5	5	5	5
PIN 36	4.8	4.8	4.8	4.8	4.8	4.8	4.8
PIN 37	0	0	0	0	0	0	0
PIN 38	0	0	0	0	0	0	0

Main (System Control) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 601						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 39	4.8	0	0	4.8	0	4.8	0
PIN 40	4.8	4.8	4.8	0	4.8	0	5
PIN 41	0	5	0	0	0	0	0
PIN 42	0	0	5	0	0	5	5
PIN 43	0	0	0	0	0	5	5
PIN 44	0	0	0	0	0	0	0
PIN 45	5	5	5	5	5	5	5
PIN 46	2.8	2.8	2.8	2.8	2.8	2.8	2.8
PIN 47	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PIN 48	0	0	0	5	0	5	0
PIN 49	0	0	0	5	5	5	5
PIN 50	0	0	0	0	0	0	0
PIN 51	0	5	0	0	0	0	0
PIN 52	4.8	4.8	4.8	4.8	4.8	4.8	4.8
PIN 53	4.8	4.8	4.8	4.8	4.8	4.8	4.8
PIN 54	0	5	5	5	5	5	5
PIN 55	5	0	0	5	5	0	0
PIN 56	0	0	0	0	0	0	0
PIN 57	0	0	0	0	0	0	0
PIN 58	5	5	5	5	5	5	5
PIN 59	5	5	5	5	5	5	5
PIN 60	5	5	5	5	5	5	5
PIN 61	5	5	5	5	5	5	5
PIN 62	5	5	5	5	5	5	5
PIN 63	5	5	5	5	5	5	5
PIN 64	0	0	0	0	0	0	0

Main (System Control) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 602						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	5	5	5	5	5	5	5
PIN 2	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 3	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 4	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 5	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 6	0	0	0	0	0	0	0
PIN 7	0	0	0	0	0	0	0
PIN 8	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 9	0	0	0	0	0	0	0
PIN 10	0	0	0	0	0	0	0
PIN 11	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 12	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 13	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 14	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 15	5	5	5	5	5	5	5
PIN 16	5.1	5.1	5.1	5.1	5.1	5.1	5.1

Main (System Control) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 603						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0.7	0.7	0.7	0.7	0.7	0.7	0.7
PIN 2	9.7	9.7	9.7	9.7	9.7	9.7	9.7
PIN 3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
PIN 4	2.2	2.2	2.2	2.2	2.2	2.2	2.2
PIN 5	0	0	0	0	0	0	0
PIN 6	1.8	1.8	1.8	1.8	1.8	1.8	1.8
PIN 7	0.9	0.9	0.9	0.9	0.9	0.9	0.9
PIN 8	6	6	6	6	6	6	6

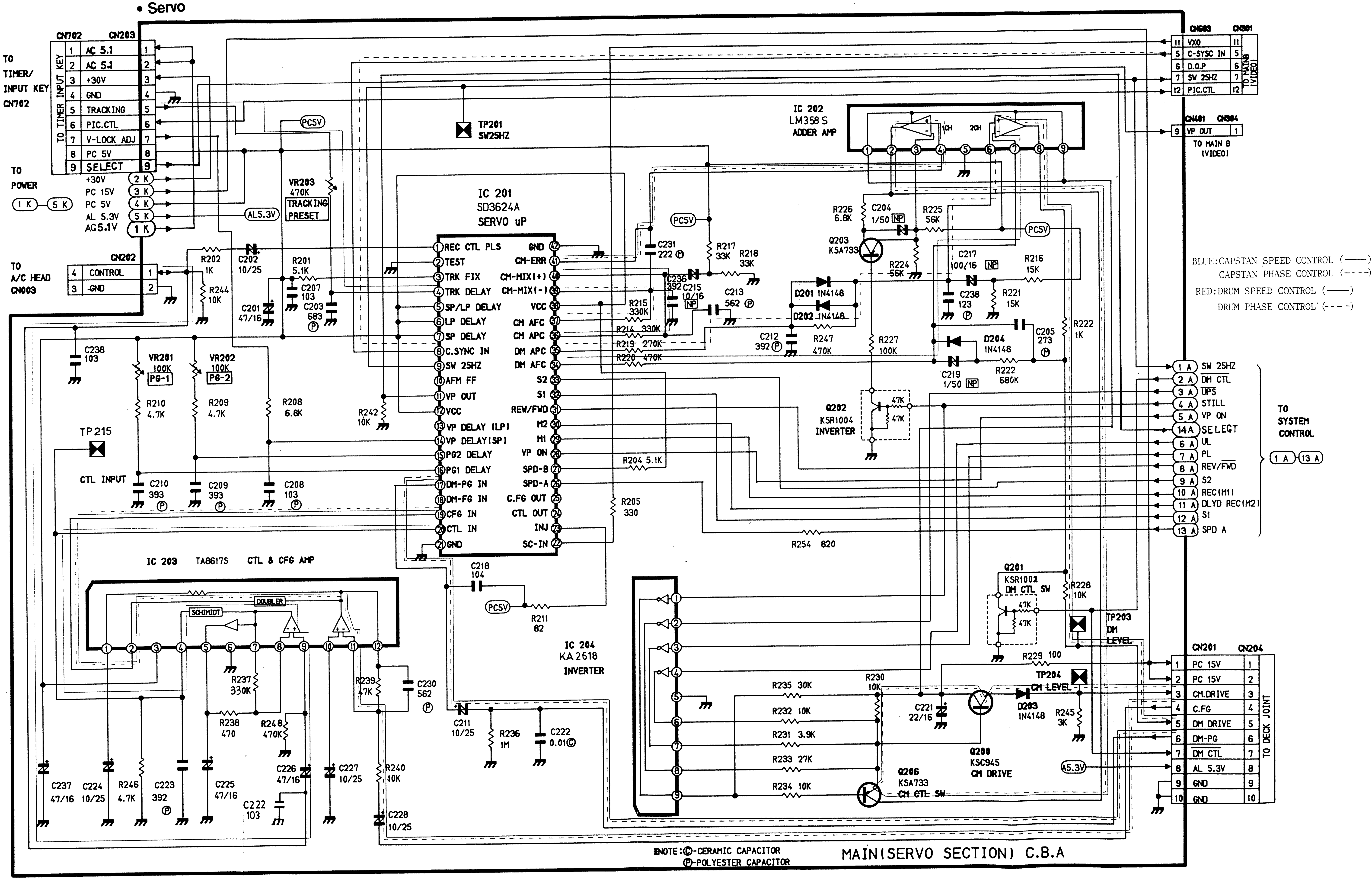
Main (System Control) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	STOP			REC			PLAY			REW			F. FWD			REV. S			FWD. S		
Tr NO.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 601	0	5	0.8	0	5	0.8	0	5	0.8	0	5	0.8	0	5	0.8	0	5	0.8	0	5	0.8
Q 602	0	1.5	4.5	0	1.5	4.5	0	1.5	4.5	0	1.5	4.5	0	1.5	4.5	0	1.5	4.5	0	1.5	4.5
Q 603	0	4.8	0.3	0	4.8	0.3	0	4.8	0.3	0	4.8	0.3	0	4.8	0.3	0	4.8	0.3	0	4.8	0.3

Main (System Control) C.B.A

• Servo


CN702
CN203
TO TIMER/ INPUT KEY CN702
TO TIMER INPUT KEY
1 AC 5.1
2 AC 5.1
3 +30V
4 GND
5 TRACKING
6 PIC.CTL
7 V-LOCK ADJ
8 PC 5V
9 SELECT
TO POWER
1 K
5 K
+30V 2 K
PC 15V 3 K
PC 5V 4 K
AL 5.3V 5 K
AC5.1V 1 K
AL5.3V
TO A/C HEAD CN003
CN202
4 CONTROL
3 GND
PC5V
VR203 470K TRACKING PRESET
TP201 SW25HZ
IC 201 SD3624A SERVO uP
1 REC CTL PLS
2 TEST
3 TRK FIX
4 TRK DELAY
5 SP/LP DELAY
6 LP DELAY
7 SP DELAY
8 C.SYNC IN
9 SW 25HZ
10 AFM FF
11 VP OUT
12 VCC
13 VP DELAY (LP)
14 VP DELAY(SP)
15 PG2 DELAY
16 PG1 DELAY
17 DM-PG IN
18 DM-FG IN
19 CFG IN
20 CTL IN
21 GND
42 GND
41 CM-ERR
40 CM-MIX(+)
39 CM-MIX(-)
38 VCC
37 CM AFC
36 CM APC
35 DM APC
34 DM AFC
33 S2
32 S1
31 REW/FWD
30 M2
29 M1
28 VP ON
27 SPD-B
26 SPD-A
25 C.FG OUT
24 CTL OUT
23 INJ
22 SC-IN
R202 1K
C202 10/25
R201 5.1K
R244 10K
C201 47/16
C207 103
C203 683 P
C238 103
VR201 100K PG-1
VR202 100K PG-2
R210 4.7K
R209 4.7K
R208 6.8K
R242 10K
TP 215
CTL INPUT
C210 393 P
C209 393 P
C208 103 P
IC 202 LM358S ADDER AMP
1CH 2CH
C231 222 P
R217 33K
R218 33K
C236 392
C215 10/16 NP
C213 562 P
R215 330K
R214 330K
R219 270K
R220 470K
C212 392 P
R247 470K
D201 1N4148
D202 1N4148
R226 6.8K
C204 1/50 NP
R225 56K
Q203 KSA733
R224 56K
C217 100/16 NP
R216 15K
C238 123 P
R221 15K
R222 1K
C205 273 P
D204 1N4148
C219 1/50 NP
R222 680K
R227 100K
Q202 KSR1004 INVERTER
47K
47K
R204 5.1K
R205 330
R254 820
CN503 CN301
11 VXO
5 C-SYSC IN
6 D.O.P
7 SW 25HZ
12 PIC.CTL
TO MAIN B (VIDEO)
CN401 CN304
9 VP OUT 1
TO MAIN B (VIDEO)
BLUE:CAPSTAN SPEED CONTROL (——)
CAPSTAN PHASE CONTROL (- - -)
RED:DRUM SPEED CONTROL (——)
DRUM PHASE CONTROL (- - -)
1 A SW 25HZ
2 A DM CTL
3 A UPS
4 A STILL
5 A VP ON
14A SELECT
6 A UL
7 A PL
8 A REV/FWD
9 A S2
10 A REC(M1)
11 A DLYD REC(M2)
12 A S1
13 A SPD A
TO SYSTEM CONTROL
1 A 13 A
IC 203 TA8617S CTL & CFG AMP
SCHMIDT
DOUBLER
R237 330K
R238 470
R248 470K
R239 47K
C230 562 P
R240 10K
C237 47/16
C224 10/25
R246 4.7K
C223 392 P
C225 47/16
C222 103
C226 47/16
C227 10/25
C228 10/25
C218 104
PC5V
R211 82
C211 10/25
R236 1M
C222 0.01 C
IC 204 KA2618 INVERTER
Q201 KSR1002 DM CTL SW
47K
47K
R228 10K
TP203 DM LEVEL
R229 100
TP204 CM LEVEL
R235 30K
R232 10K
R231 3.9K
R233 27K
R234 10K
R230 10K
C221 22/16
D203 1N4148
R245 3K
Q200 KSC945 CM DRIVE
Q206 KSA733 CM CTL SW
A5.3V
CN201 CN204
1 PC 15V
2 PC 15V
3 CM.DRIVE
4 C.FG
5 DM DRIVE
6 DM-PG
7 DM CTL
8 AL 5.3V
9 GND
10 GND
TO DECK JOINT
NOTE: C-CERAMIC CAPACITOR
P-POLYESTER CAPACITOR
MAIN(SERVO SECTION) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 201						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0.3	2.4	2.2	0.7	3.6	2.8	2.6
PIN 2	0	0	0	0	0	0	0
PIN 3	4.6	4.6	4.5	4.3	3.6	4.3	4.3
PIN 4	2.6	1.4	1	0.7	0.7	0.7	0.7
PIN 5	5.1	5.2	5.2	4.9	5.2	4.9	5
PIN 6	5.1	5.2	5.2	4.9	5.2	4.9	5
PIN 7	5.1	5.2	5.2	4.9	5.2	4.9	5
PIN 8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
PIN 9	4.1	2.1	2.1	4.1	4.0	2.1	2.1
PIN 10	—	—	—	—	—	—	—
PIN 11	0	0	0	0	0	0.4	0.3
PIN 12	5.1	5.2	5.2	4.4	5.2	5	5
PIN 13	0	0	0	0	0	0	0
PIN 14	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PIN 15	0	0	0	0	0	0	0
PIN 16	0	0	0	0	0	0	0
PIN 17	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PIN 18	—	—	—	—	—	—	—
PIN 19	4.6	0.7	0.7	0.4	0.3	0.3	0.3
PIN 20	0	2.1	2.1	0	0	2.4	2.4
PIN 21	0	0	0	0	0	0	0
PIN 22	0.7	0.6	0.6	0.7	0.7	0.7	0.7
PIN 23	2.5	2.7	2.5	2.4	2.4	2.4	2.4
PIN 24	—	—	—	—	—	—	—
PIN 25	—	—	—	—	—	—	—
PIN 26	5	4	5	5	5	5	5
PIN 27	5	4	5	5	5	5	5
PIN 28	0	0	0	5.2	5	5.2	5
PIN 29	0	5	0	0	0	0	0
PIN 30	0	5	0	0	0	0	0
PIN 31	0	0	0	5	0	5.2	0
PIN 32	0	0	0	0	0	0	0
PIN 33	0	0	0	5	5	5	5
PIN 34	0.1	2.4	2.4	0.1	0.1	2.4	2.5
PIN 35	2.4	2.5	2.5	2.4	2.4	2.5	2.5
PIN 36	2.4	2.4	2.5	2.4	2.4	2.5	2.5
PIN 37	0	2.4	2.4	2.4	2.4	2.5	2.5
PIN 38	5.1	5.2	5.2	5	5	5	5

Main (Servo) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 201						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 39	1	2.6	2.8	2	3	2.4	2.5
PIN 40	2.6	2.6	2.8	2	3	2.4	2.4
PIN 41	4.4	2.6	2.4	2.5	2.5	2.5	2.4
PIN 42	0	0	0	0	0	0	0

Main (Servo) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 202						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	14.2	14.7	15	14.1	14.0	14.1	14.1
PIN 2	12.9	2.8	2.6	9.2	10.2	10.0	9.5
PIN 3	2.6	2.6	2.4	2.5	2.5	2.4	2.5
PIN 4	4.2	2.4	2.4	2.5	2.5	2.5	2.5
PIN 5	0	0	0	0	0	0	0
PIN 6	2.5	2.5	2.5	2.5	2.5	2.5	2.5
PIN 7	0.1	2.5	2.5	0.1	0.1	2.4	2.4
PIN 8	12.8	1.6	1.6	12.7	12.6	1.6	1.4
PIN 9	14.2	14.4	15	14.1	14.0	14.1	14.1

Main (Servo) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 203						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	2.5	2.4	2.4	2.4	2.4	2.4	2.4
PIN 2	4.5	0.7	0.7	0.4	0.4	0.4	0.4
PIN 3	5.1	5.2	5.2	5	5	5	5
PIN 4	4.2	2.1	2.1	0	0	2.4	2.3
PIN 5	2	2.2	2	2	2	2	2
PIN 6	0	0	0	0	0	0	0
PIN 7	2	2.2	2	2	2	2	2
PIN 8	2	2.2	2	2	2	2	2
PIN 9	2	2	2	2	2	2	2
PIN 10	2.5	2.6	2.6	2.6	2.6	2.6	2.6
PIN 11	2.5	2.6	2.6	2.6	2.6	2.6	2.6
PIN 12	2.5	2.6	2.6	2.6	2.6	2.6	2.6

Main (Servo) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 204						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	5	5	5	5	5	5
PIN 2	0	0	0	0	0	0	0
PIN 3	0	0	0	0	0	0	0
PIN 4	0	0	0	0	0	0	0
PIN 5	0	0	0	0	0	0	0
PIN 6	13.9	3	3	10.5	9	9.7	9.5
PIN 7	13.9	3	3	10.5	9	9.7	9.5
PIN 8	13.9	3	3	10.5	9	9.7	9.5
PIN 9	13.9	0	0	0	0	0	0

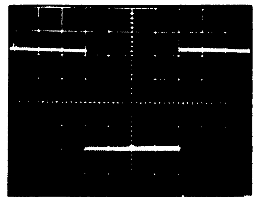
Main (Servo) C.B.A

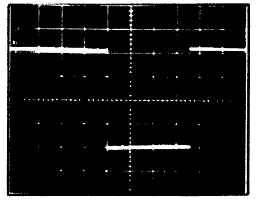
REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

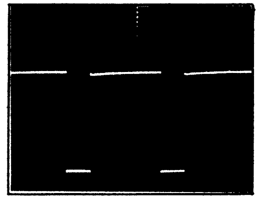
MODE	STOP			REC			PLAY			REW			F. FWD			REV. S			FWD. S		
TR NO.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 201	0	0	5.2	0	1.4	0	0	1.4	0	0	0	5.2	0	0	5	0	1.4	0	0	1.4	0
Q 202	0	12.1	0	0	2.4	0	0	2.4	0	0	9	0	0	9	0	0	9	0	0	9	0
Q 203	2.4	12.4	12.0	2.5	2.8	2.4	2.6	2.8	2.4	2.4	9.3	9	2.4	9.8	9.2	2.4	9.5	8.7	2.4	9.4	3
Q 206	13.5	12.5	13.9	2.8	2.8	2.2	2.8	2.8	2.2	9.8	9.3	9.8	9.2	9.2	8	9.8	9.7	9.1	9.8	9.6	9.4
Q 200	12.8	14.0	13.5	2.2	15	2.8	2.4	15	2.8	9.5	13.8	9.9	9	13.8	9.5	9.1	14.1	9.8	8.8	15	9.4

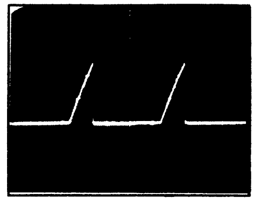
Main (Servo) C.B.A

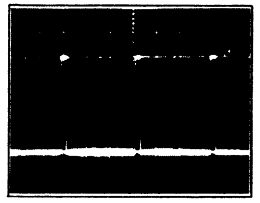
SERVO

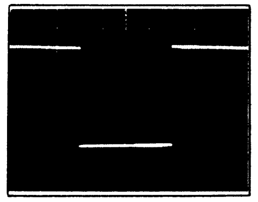
1

TP201
1V/5msec/cm
REC/PLAY

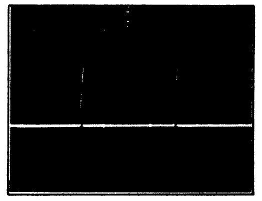
2

TP215
1V/5msec/cm
REC/PLAY

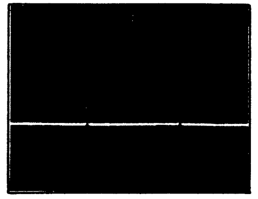
3

IC201-1
1V/10msec/cm
REC/PLAY

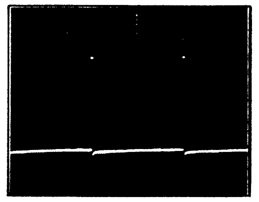
4

IC201-4
0.5V/10msec/cm
REC/PLAY

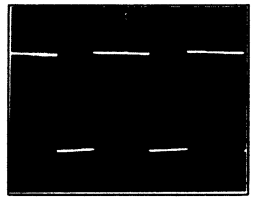
5

IC201-8
1V/5msec/cm
REC/PLAY

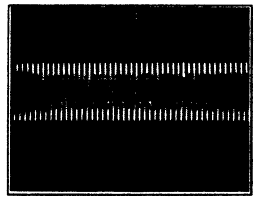
6

IC201-9
1V/5msec/cm
REC/PLAY

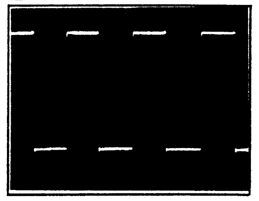
7

IC201-15
1V/10msec/cm
REC/PLAY

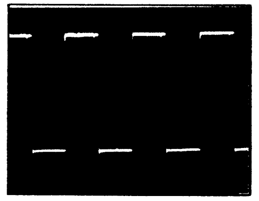
8

IC201-16
1V/10msec/cm
REC/PLAY

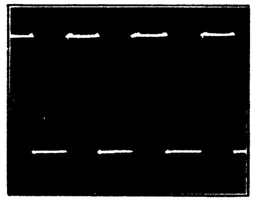
9

IC201-19
1V/2msec/cm
REC/PLAY

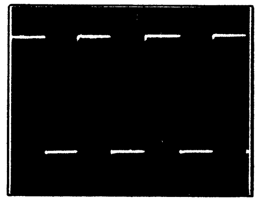
10

IC201-20
1V/10msec/cm
PLAY

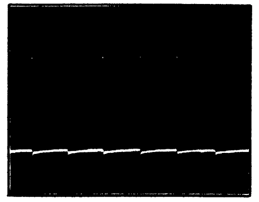
11

IC201-22
0.1V/1μsec/cm
REC/PLAY

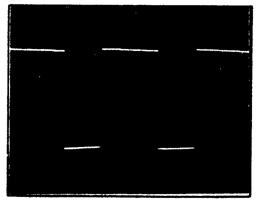
12

IC201-34
1V/10μsec/cm
REC/PLAY

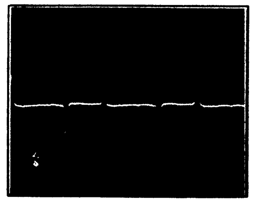
13

IC201-35
1V/10μsec/cm
REC/PLAY

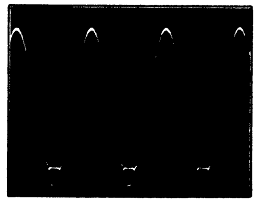
14

IC201-36
1V/10μsec/cm
REC/PLAY

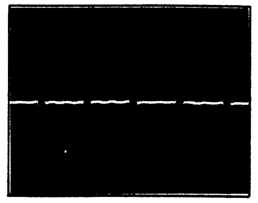
15

IC201-37
1V/10μsec/cm
REC/PLAY

16

IC203-2
1V/0.5msec/cm
REC/PLAY

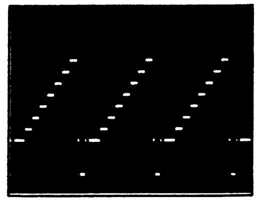
17

IC203-4
1V/10msec/cm
PLAY

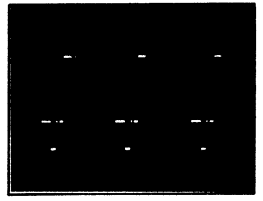
18

IC203-7
0.5V/10msec/cm
PLAY

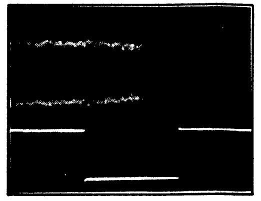
19

IC203-12
0.5V/0.5msec/cm
REC/PLAY

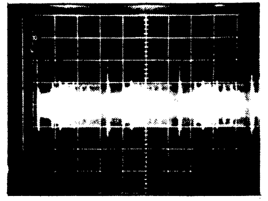
20

IC201-17
0.2V/10msec/cm
REC/PLAY

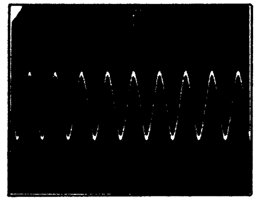
LUMINANCE/CHROMINANCE

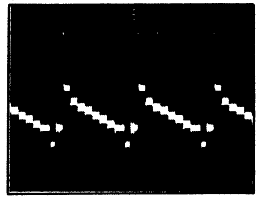
1

TP301
0.5V/20μsec/cm
REC/PLAY

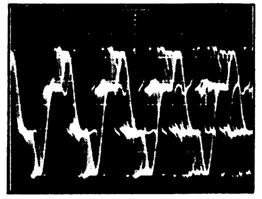
2

TP302
0.5V/20μsec/cm
REC/PLAY

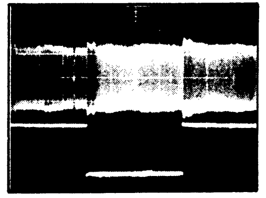
3

TP303
0.1V/5msec/cm
PLAY

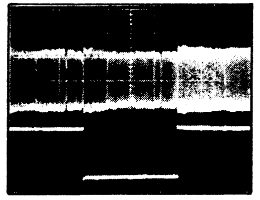
4

TP0321
10mV/20usec/cm
REC

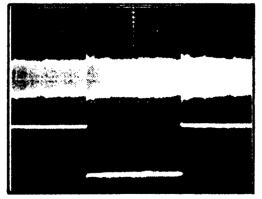
5

TP305
10mV/0.2μsec/cm
REC/PLAY

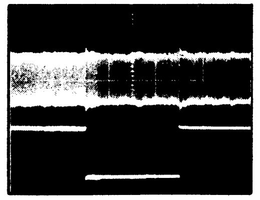
6

TP306
0.2V/20μsec/cm
REC

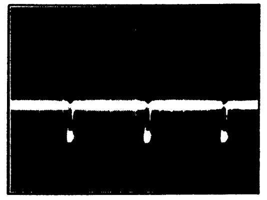
7

TP310 (Pre Amp)
1V/0.1μsec/cm
REC

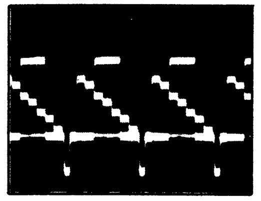
8

IC301-2
10mV/5msec/cm
PLAY

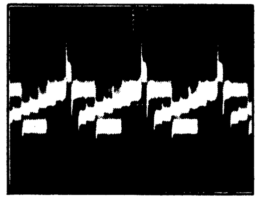
9

IC301-3
20mV/5msec/cm
PLAY

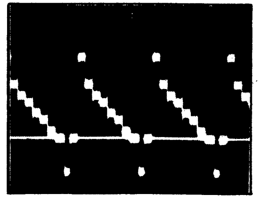
10

IC301-5
20mV/5msec/cm
PLAY

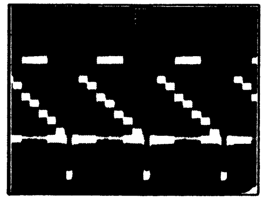
11

IC301-16
0.5V/5msec/cm
PLAY

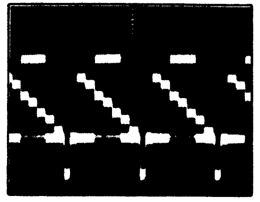
12

IC302-1
0.1V/20μsec/cm
REC

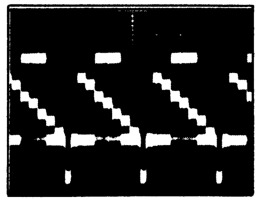
13

IC302-1
0.1V/20μsec/cm
PLAY

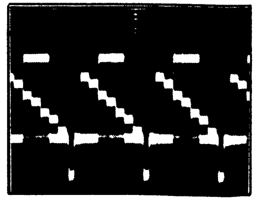
14

IC302-3
50mV/20μsec/cm
PLAY

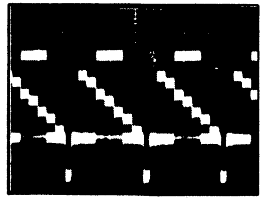
15

IC302-3
0.1V/ 20μsec/cm
REC

16

IC302-5
0.1V/ 20μsec/cm
PLAY

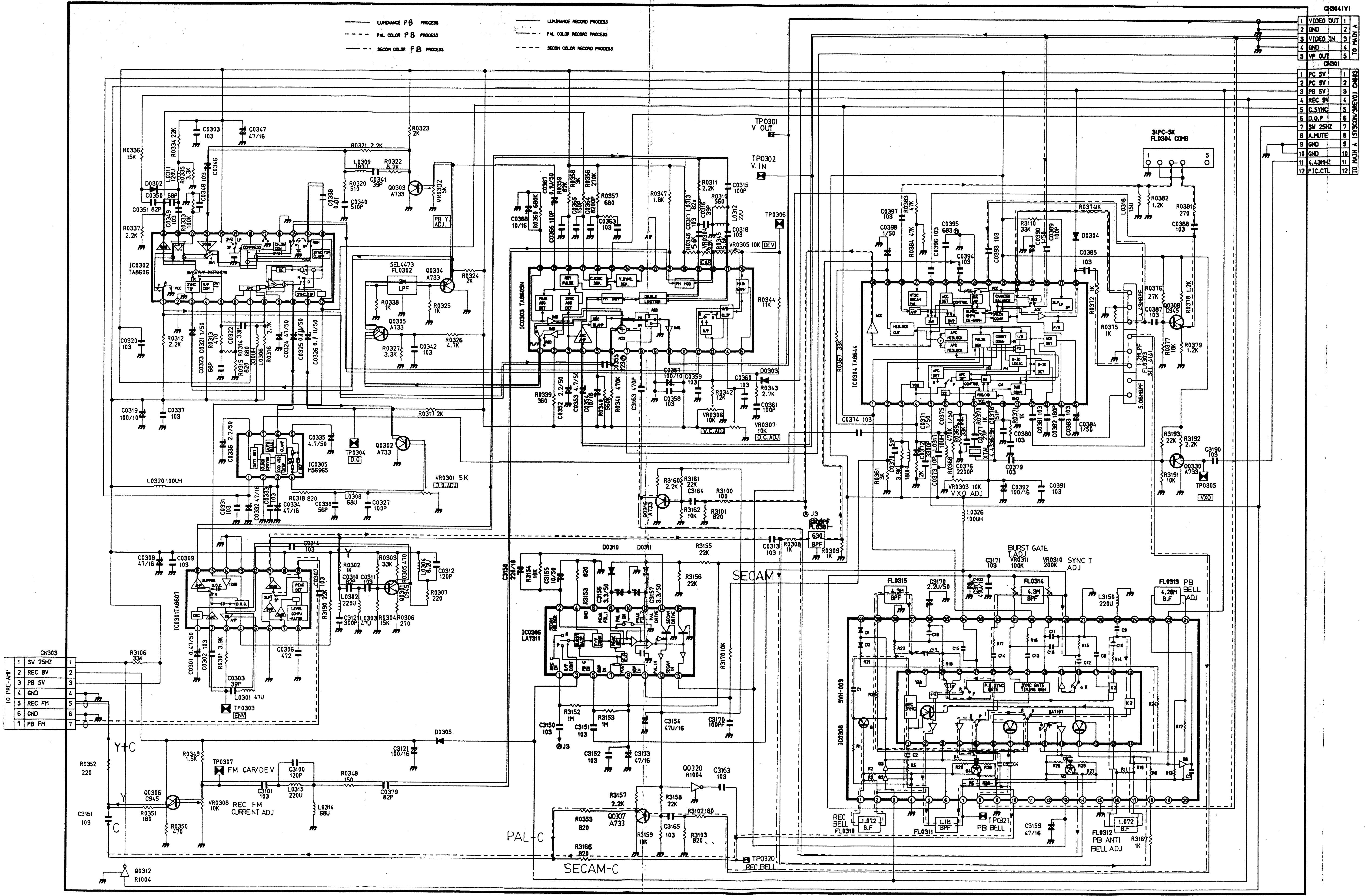
17

IC302-6
0.1V/20μsec/cm
PLAY

18

IC302-10
0.1V/20μsec/cm
PLAY

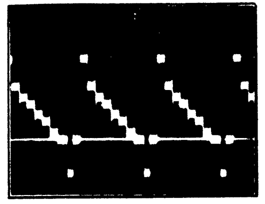
19

IC302-11
0.1V/20μsec/cm
PLAY

20

IC302-13
0.2V/20μsec/cm
PLAY

• Luminance/Chrominance

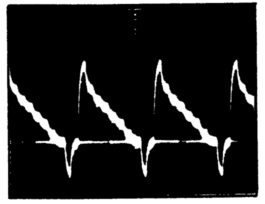

LUMINANCE PB PROCESS
PAL COLOR PB PROCESS
SECOM COLOR PB PROCESS
LUMINANCE RECORD PROCESS
PAL COLOR RECORD PROCESS
SECOM COLOR RECORD PROCESS
CN304(V)
1 VIDEO OUT 1
2 GND 2
3 VIDEO IN 3
4 GND 4
5 VP OUT 5
TO MAIN A
CN301
1 PC 5V 1
2 PC 9V 2
3 PB 5V 3
4 REC 9V 4
5 C.SYNC 5
6 D.O.P 6
7 SW 25HZ 7
8 A.MUTE 8
9 GND 9
10 GND 10
11 4.43MHZ 11
12 PIC.CTL 12
TO MAIN A (SYSCON/SREV01 CN603)
CN303
1 SW 25HZ 1
2 REC 8V 2
3 PB 5V 3
4 GND 4
5 REC FM 5
6 GND 6
7 PB FM 7
TO PRE-AMP
IC0302 TA8606
IC0303 TA8645N
IC0304 TA8644
IC0305 M5696
IC0301 TA8607
IC0306 LA7311
IC0308 SVH-009
TP0301 V OUT
TP0302 V IN
TP0306
TP0304 D.O
TP0303 ENV
TP0307 FM CAR/DEV
TP0305 VXO
TP0320 REC BELL
TP0321 PB BELL
VR0302 5K PB Y. ADJ.
VR0305 10K DEV
VR0306 10K W.C.ADJ
VR0307 10K D.C.ADJ
VR0301 5K D.O.ADJ
VR0303 10K VXO ADJ
VR0308 10K REC FM CURRENT ADJ
SEL4473 FL0302 3M LPF
31PC-5K FL0304 COMB
4.43BPF
1.2LPF
5.06BPF
FL0303 SEL 3161
FL0301 630 BPF
BURST GATE T.ADJ
VR0311 100K
VR0310 200K SYNC T ADJ
FL0315 4.3M BPF
FL0314 4.3M BPF
FL0313 4.28M B.F PB BELL ADJ
FL0310 1.072 B.F REC BELL
FL0311 1.1M BPF
FL0312 1.072 B.F PB ANTI BELL ADJ
SECAM
PAL-C
SECAM-C
Y+C
Y
C
Q0303 A733
Q0304 A733
Q0305 A733
Q0302 A733
Q0301 C945
Q0306 C945
Q0307 A733
Q0316 A733
Q0308 C945
Q0330 A733
Q0320 R1004
Q0312 R1004
D0302
D0303
D0304
D0305
D0310
D0311
L0320 100UH
L0326 100UH
L3150 220U
J3

21



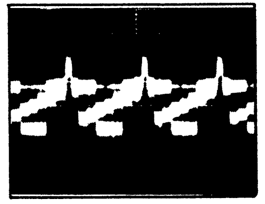
IC302-15
0.1V/20μsec/cm
REC

22



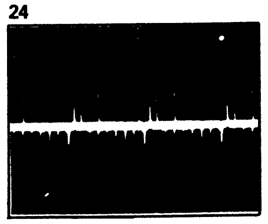
IC302-21
50mV/20μsec/cm
REC

23



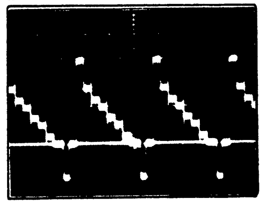
IC302-21
20mV/20μsec/cm
PLAY

24



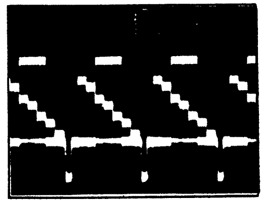
IC302-23
0.2V/20μsec/cm
PLAY

25



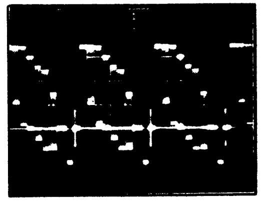
IC302-24
0.2V/20μsec/cm
REC

26



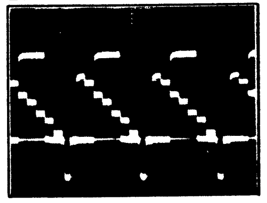
IC302-24
0.2V/20μsec/cm
PLAY

27



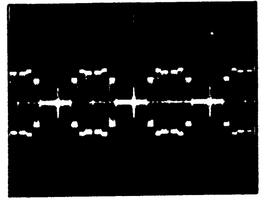
IC303-4
0.2V/20μsec/cm
REC/PLAY

28



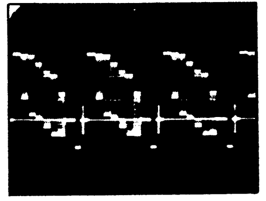
IC303-6
0.1V/20μsec/cm

29



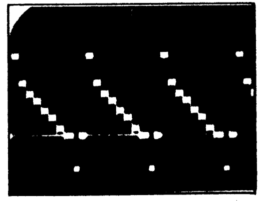
IC303-8
0.2V/20μsec/cm
REC/PLAY

30



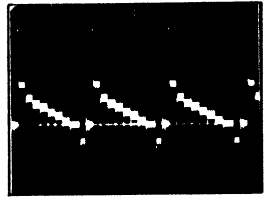
IC303-10
0.5V/20μsec/cm
REC/PLAY

31



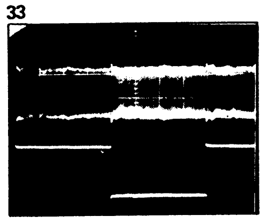
IC303-12
0.5V/20μsec/cm
REC

32



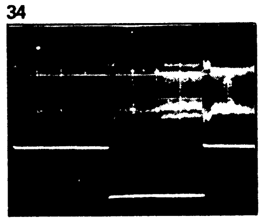
IC303-16
0.2V/5msec/cm
REC

33



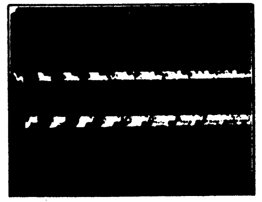
IC303-17
0.5V/5msec/cm
PLAY

34



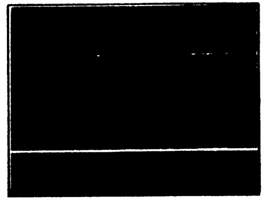
IC302-19
0.1V/5msec/cm
PLAY

35



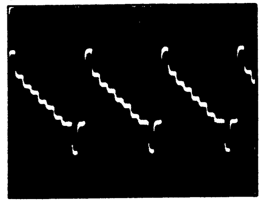
IC303-21
0.5V/0.2μsec/cm
REC

36



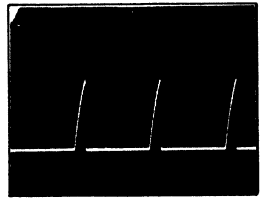
IC303-25
1V/5msec/cm
REC/PLAY

37



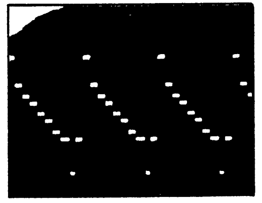
IC303-27
0.2V/20μsec/cm
REC/PLAY

38



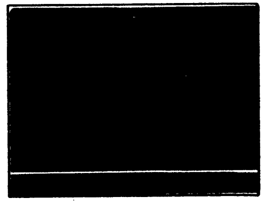
IC303-28
1V/20μsec/cm
REC/PLAY

39



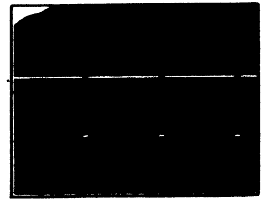
IC303-29
0.1V/20μsec/cm
REC

40



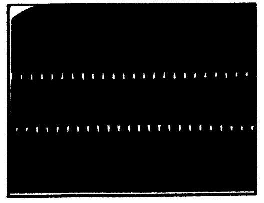
IC304-1
1V/20μsec/cm
REC/PLAY

41



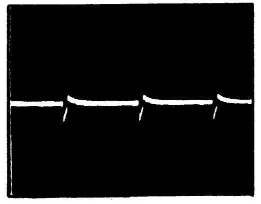
IC304-2
1V/20μsec/cm
REC/PLAY

42



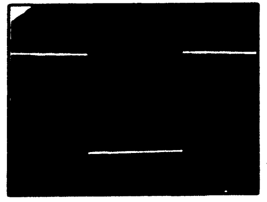
IC304-3
0.1V/0.5μsec/cm
REC/PLAY

43



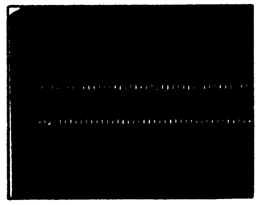
IC304-4
0.1V/20μsec/cm
REC

44



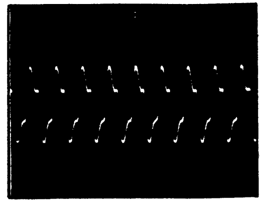
IC304-5
1V/5msec/cm
REC/PLAY

45



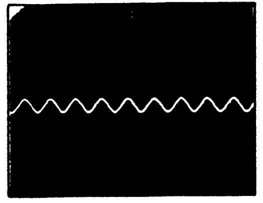
IC304-6
0.1V/0.5μsec/cm
REC/PLAY

46



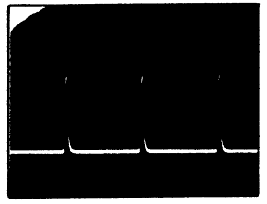
IC304-8
0.5V/0.2μsec/cm
REC/PLAY

47



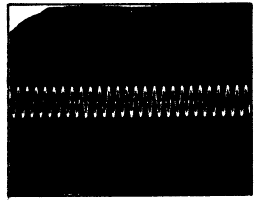
IC304-10
0.5V/0.2μsec/cm
REC/PLAY

48



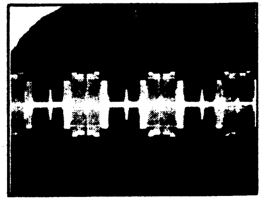
IC304-13
0.5V/20μsec/cm
REC/PLAY

49



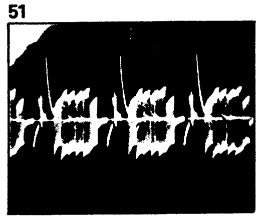
IC304-14
0.2V/0.5μsec/cm
REC/PLAY

50



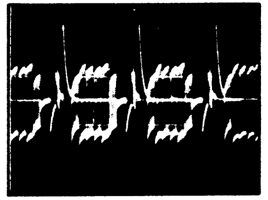
IC304-16
0.5V/20μsec/cm
REC

51



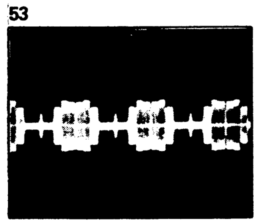
IC304-18
0.2V/20μsec/cm
REC/PLAY

52



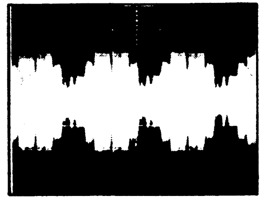
IC304-20
0.2V/20μsec/cm
REC

53



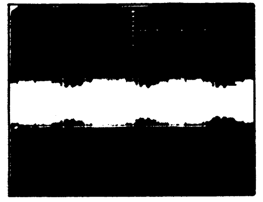
IC304-22
0.1V/20μsec/cm
REC/PLAY

54



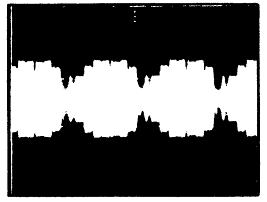
IC304-24
50mV/20μsec/cm
PLAY

55



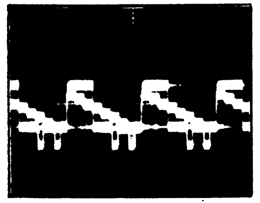
IC304-28
50mV/20μsec/cm
REC/PLAY

56



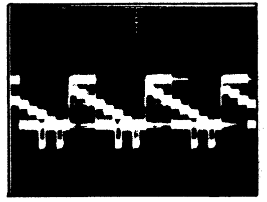
IC304-30
0.2V/20μsec/cm
REC/PLAY

57



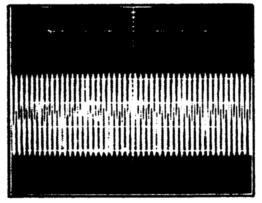
IC305-4
0.5V/20μsec/cm
PLAY

58



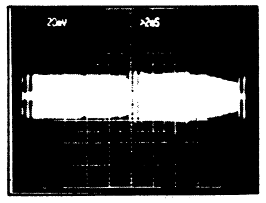
IC305-6
0.2V/20μsec/cm
PLAY

59



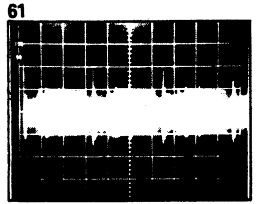
IC305-7
50mV/0.5μsec/cm
REC/PLAY

60



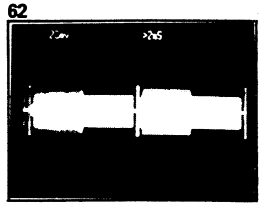
IC0308-7
20mV/2msec/cm
PLAY

61



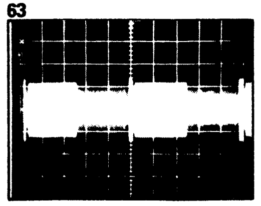
IC0308-7
10mV/20usec/cm
REC

62



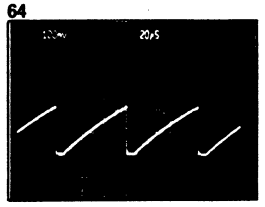
IC0308-14
20mV/2msec/cm
PLAY

63



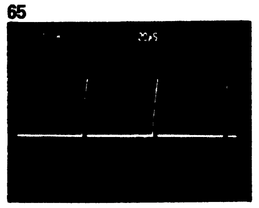
IC0308-21
10mV/2msec/cm
PLAY

64



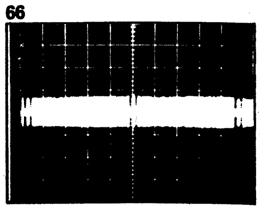
IC0308-29, 35
100mV/20usec/cm
REC/PLAY

65



IC0308-31
100mV/20usec/cm
REC/PLAY

66



IC0308-37
5mV/2msec/cm
PLAY

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 301						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	0	0.9	0	0	0.9	0.9
PIN 2	0	0	3.0	0	0	3.0	3.0
PIN 3	0	0	1.5	0	0	1.5	1.5
PIN 4	0	0	2.7	0	0	2.6	2.7
PIN 5	0.5	0	3.5	0	0	3.4	3.5
PIN 6	0	0	0	0	0	0	0
PIN 7	0	0	3.4	0	0	3.4	3.5
PIN 8	0	0	0	0	0	0	0.1
PIN 9	0	0	3.5	0	0	3.4	3.5
PIN 10	0	0	4.9	0	0	4.9	4.9
PIN 11	0	0	2.1	0	0	2.1	2.1
PIN 12	0	0	3.0	0	0	3.0	3.0
PIN 13	0	0	0	0	0	0	0
PIN 14	0	0	0	0	0	0	0
PIN 15	0	0	4.8	0	0	4.8	4.8
PIN 16	0	0	2.0	0	0	2.0	2.0

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

PIN NO.		STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
Q301	E	0	0	0.7	0	0	0.7	0.7
	B	0	0	1.4	0	0	1.4	1.4
	C	0	0.2	4.6	0	0	4.6	4.6
Q302	E	0	0	0	0	0	0	0
	B	2	2	1.3	2	2	1.3	1.3
	C	0	0	2	0	0	2	2
Q303	E	0	0	0	0	0	0	0
	B	0.8	0.8	0.9	0.8	0.8	0.9	0.9
	C	1.5	1.5	1.6	1.5	1.5	1.6	1.6
Q304	E	0	0	0	0	0	0	0
	B	0.7	0.7	0.7	0.7	0.7	0.9	0.9
	C	1.3	1.3	1.4	1.3	1.3	1.5	1.5
Q305	E	0.7	0.7	0.8	0.7	0.7	0.8	0.8
	B	2.0	2	2	2	2	2	2
	C	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Q306	E	0	3.1	0	0	0	0	0
	B	0	3.8	0	0	0	0	0
	C	0	9	2	0	0	2	2
Q307	E	0	0	0	0	0	0	0
	B	0	0	0	0	0	0	0
	C	0	0.4	0	0	0	0	0
Q308	E	3	3	3	3	3	3	3
	B	1	1	1	1	1	1	1
	C	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Q309	E	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	B	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	C	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Q311	E	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	B	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	C	0	0	0	0	0	0	0
Q312	E	0	0	0	0	0	0	0
	C	2.2	1.2	1.2	2.2	2.2	1.2	1.2
	B	0	1.2	1.2	0	0	1.2	1.2

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

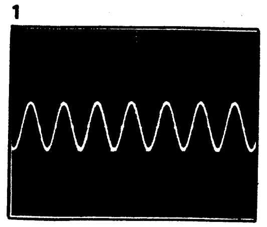
MODE	IC 302						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0.2	3.1	3.1	0.2	0.2	3.1	3.1
PIN 2	0	0	0	0	0	0	0
PIN 3	2.4	2.3	2.4	2.4	2.4	2.4	2.4
PIN 4	0.2	5	4.9	0.2	0	5	5.0
PIN 5	0.6	2.4	2.4	0.6	0.6	2.4	2.4
PIN 6	0.6	2.4	2.4	0.6	0.6	2.4	2.4
PIN 7	2.5	2.5	2.4	2.5	2.5	2.5	2.4
PIN 8	0.3	5.0	4.9	0.3	0.3	4.9	4.9
PIN 9	2.0	2.0	2.3	1.9	1.9	2.3	2.3
PIN 10	2.2	2.2	2.5	2.2	2.2	2.5	2.5
PIN 11	2.5	2.5	2.5	2.5	2.5	2.6	2.5
PIN 12	0.2	0	4.8	2.0	0.2	4.8	4.8
PIN 13	2.4	2.5	2.5	2.4	2.4	2.5	2.5
PIN 14	2.0	2.2	2.5	1.9	2.0	2.5	2.5
PIN 15	2.3	2.2	2.4	2.3	2.3	2.4	2.4
PIN 16	0	0	0	0	0	0	0
PIN 17	0	0	0	0	0	0	0
PIN 18	2.7	2.7	2.7	2.7	2.6	2.7	2.7
PIN 19	3.6	3.6	3.6	3.6	3.6	3.6	3.6
PIN 20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 21	1.8	2.0	1.9	1.9	1.8	1.9	1.9
PIN 22	4.3	4.3	4.3	4.3	4.3	4.3	4.3
PIN 23	2.8	3.8	3.8	3.9	3.9	3.8	3.8
PIN 24	2.1	2.0	2.0	2.1	2.1	2.0	2.0

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 303						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
PIN 2	4.5	5.0	5.0	4.5	4.5	5.0	5.0
PIN 3	2.5	2.4	3.0	2.5	2.5	3.0	3.0
PIN 4	2.1	2.1	2.1	2.1	2.1	2.1	2.1
PIN 5	3.6	3.7	3.3	3.6	3.6	3.3	3.0
PIN 6	3.3	3.2	3.5	3.3	3.3	3.7	3.6
PIN 7	0	0	0	0	0	0	0
PIN 8	1.9	1.9	1.9	1.9	1.9	1.9	1.9
PIN 9	0	0	0	0	0	0	0
PIN 10	1.9	1.5	2.5	1.9	1.9	2.7	2.9
PIN 11	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 12	2.3	2.2	2.5	2.3	2.3	2.5	2.5
PIN 13	1.5	1.5	5.0	1.5	1.5	4.4	4.4
PIN 14	2.0	2.0	2.0	2.0	2.3	2.0	2.0
PIN 15	2.3	2.2	2.5	2.3	2.3	2.5	2.5
PIN 16	2.3	2.2	2.5	2.3	2.3	2.5	2.5
PIN 17	5.0	5.0	3.1	5.0	5.0	3.1	3.1
PIN 18	2.5	2.5	2.5	2.5	2.5	2.5	2.5
PIN 19	5.0	5.0	3.1	5.0	5.0	3.1	3.1
PIN 20	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 21	3.0	3.0	5.0	3.0	3.0	5.0	5.0
PIN 22	0	0	0	0	0	0	0
PIN 23	0	0	0	0	0	0	0
PIN 24	0.9	1.1	0.9	0.9	0.9	0.9	0.9
PIN 25	2.0	4.1	0.4	2.0	2	0.4	0.4
PIN 26	3.6	3.5	3.1	3.6	3.6	3.2	3.4
PIN 27	2.1	2.0	2.0	2.2	2.1	2.2	2.5
PIN 28	1.4	3.7	0.4	1.4	1.4	0.4	0.4
PIN 29	3.0	2.9	3.1	3.0	3.0	3.1	3.4
PIN 30	0	0	0	0	0	0	0

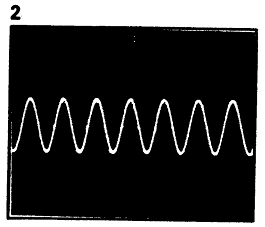
AUDIO

1



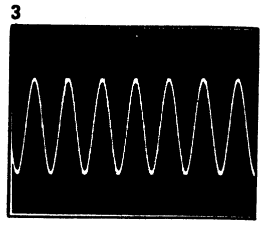
TP501
0.5V/1msec/cm
REC

2



TP502
1V/1msec/cm
REC/PLAY

3



TP503
10V/10μsec/cm
REC

MODE	IC0501						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	9	OPEN	0	0	OPEN	OPEN
PIN 2	0	3.4	0	0	0	0	0
PIN 3	0	0	0	0	0	0	0
PIN 4	0	0	0	0	0	0	0
PIN 5	8	8	8	8	8	8	8
PIN 6	9	9	9	9	9	9	9
PIN 7	0	0	0	0	0	0	0
PIN 8	9	9	9	9	9	9	9
PIN 9	0	0	0	0	0	0	0
PIN 10	0	0	5	0	0	5	5
PIN 11	0	0	0	0	0	0	0
PIN 12	0	0	0	0	0	4.6	2.4
PIN 13	0	0	0	0	0	0	0
PIN 14	0	0	0	0	0	0	0
PIN 15	2	2.4	2.4	2	2	2.4	1.2
PIN 16	0	0	0	0	0	0	0
PIN 17	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PIN 18	0	0	0	0	0	0	0
PIN 19	0	0	0	0	0	0	0
PIN 20	4	4	4	4	4	4	4
PIN 21	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PIN 22	1.4	1.4	1.4	1.4	1.4	1.4	1.4
PIN 23	0	0	0	0	0	0	0
PIN 24	0	0	0	0	0	0	0
PIN 25	0	0	0	0	0	0	0
PIN 26	0	0	0	0	0	0	0
PIN 27	0.6	0.6	0.4	0.6	0.6	0.4	0.4
PIN 28	0	0	0	0	0	0	0
PIN 29	0	0	0	0	0	0	0
PIN 30	4	4	4	4	4	4	4

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE / PIN NO.	IC 304						
	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0.8	4	0.4	0.9	0.8	0.9	4.0
PIN 2	3.7	3.8	3.8	3.7	3.7	3.8	3.8
PIN 3	5.0	5	5.0	5.0	5.0	5.0	5.0
PIN 4	1.7	1.8	1.7	1.7	1.7	2.3	1.8
PIN 5	4.3	4.3	4.3	4.3	4.3	4.3	4.3
PIN 6	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 7	2.2	2.0	2.0	2.2	2.2	2.0	2.0
PIN 8	2.5	2.3	2.3	2.5	2.5	2.3	2.3
PIN 9	5.0	50	5.0	5.0	5.0	5.0	5.0
PIN 10	3.2	3.0	3.0	3.1	3.1	3.0	3.0
PIN 11	0	0	0	0	0	0	0
PIN 12	4.3	4.3	4.4	4.3	4.3	4.3	4.3
PIN 13	3.0	3	3.0	3.0	3.0	3.0	3.0
PIN 14	2.7	3	2.7	2.7	2.7	2.7	3.0
PIN 15	2.4	2.4	2.3	2.3	2.3	2.4	2.4
PIN 16	0	0	4.4	0	0	4.4	0
PIN 17	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 18	2.5	2.5	2.5	2.5	2.5	2.5	2.5
PIN 19	2.9	3.0	3.0	2.9	3.0	3.0	3
PIN 20	2.5	2.5	2.5	2.5	2.5	2.5	2.5
PIN 21	5.0	5	5.0	5.0	5.0	5.0	5.0
PIN 22	2.7	2.8	2.8	2.7	2.7	2.8	2.8
PIN 23	0	0	0.0	0	0	0	0.0
PIN 24	1.7	1.7	2.8	1.7	1.7	2.8	1.7
PIN 25	3.6	2.3	4.5	3.6	3.6	4.0	2.3
PIN 26	2.4	2.4	2.3	2.4	2.4	2.3	2.4
PIN 27	0	0	0.0	0	0	0	0.0
PIN 28	2.7	2.7	2.6	2.7	2.7	2.6	2.7
PIN 29	1.7	2.4	2.3	1.6	1.6	2.3	2.4
PIN 30	2.8	2.8	0	2.8	2.8	0	2.8

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

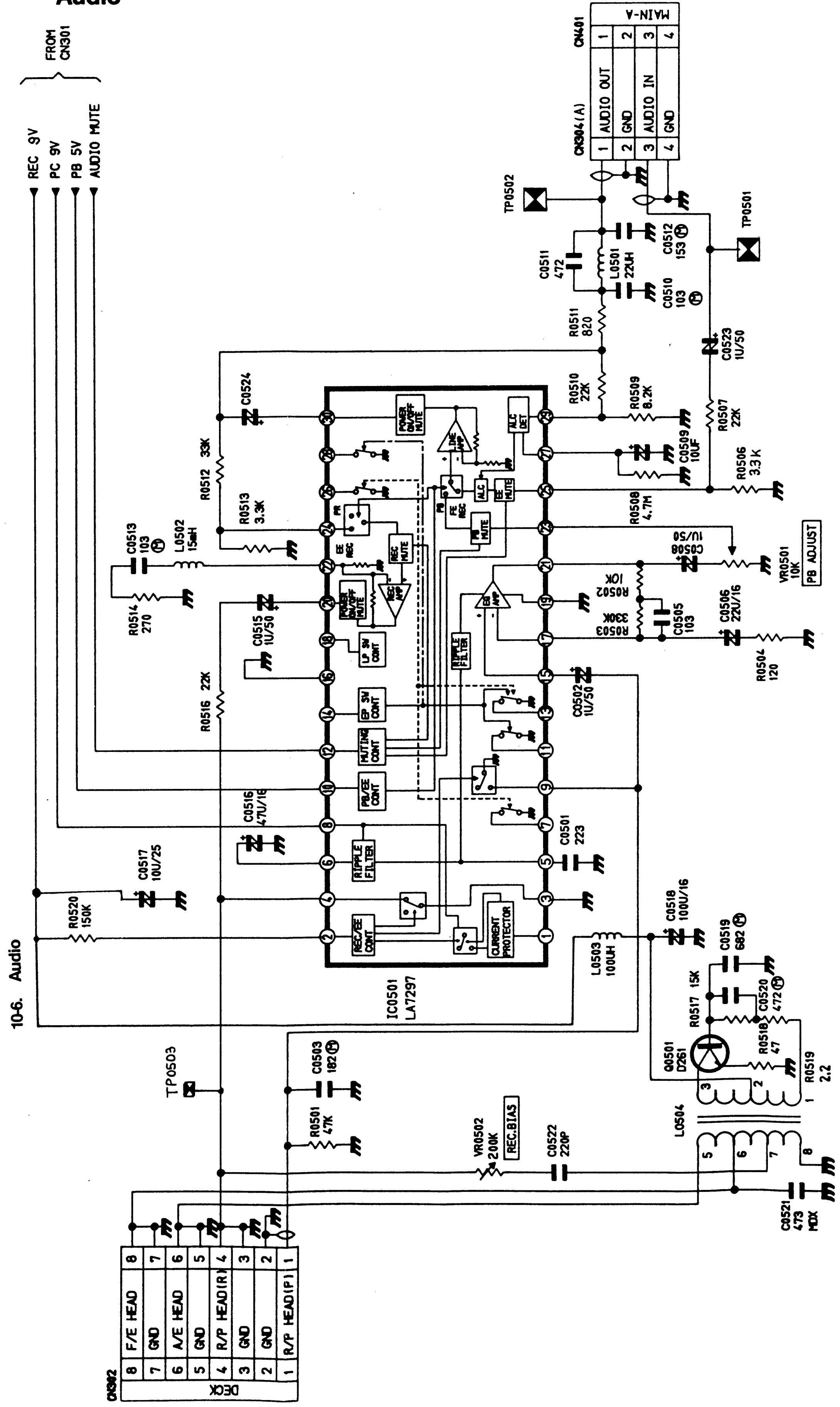
MODE / PIN NO.	IC 305						
	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	9	5	9	9	9	9	9
PIN 2	0	0	0	0	0	0	0
PIN 3	0	0	4.9	0	0	4.9	4.9
PIN 4	5.2	0	3.3	5.2	5.2	3.3	3.3
PIN 5	3.0	3.0	3.1	2	3	3.1	3.1
PIN 6	4.4	0	2.4	3.6	3	2.4	2.4
PIN 7	1.6	1.0	1.8	1.6	1.7	1.8	1.8
PIN 8	3.4	2.4	5.1	3.5	3.3	5.1	5.1

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

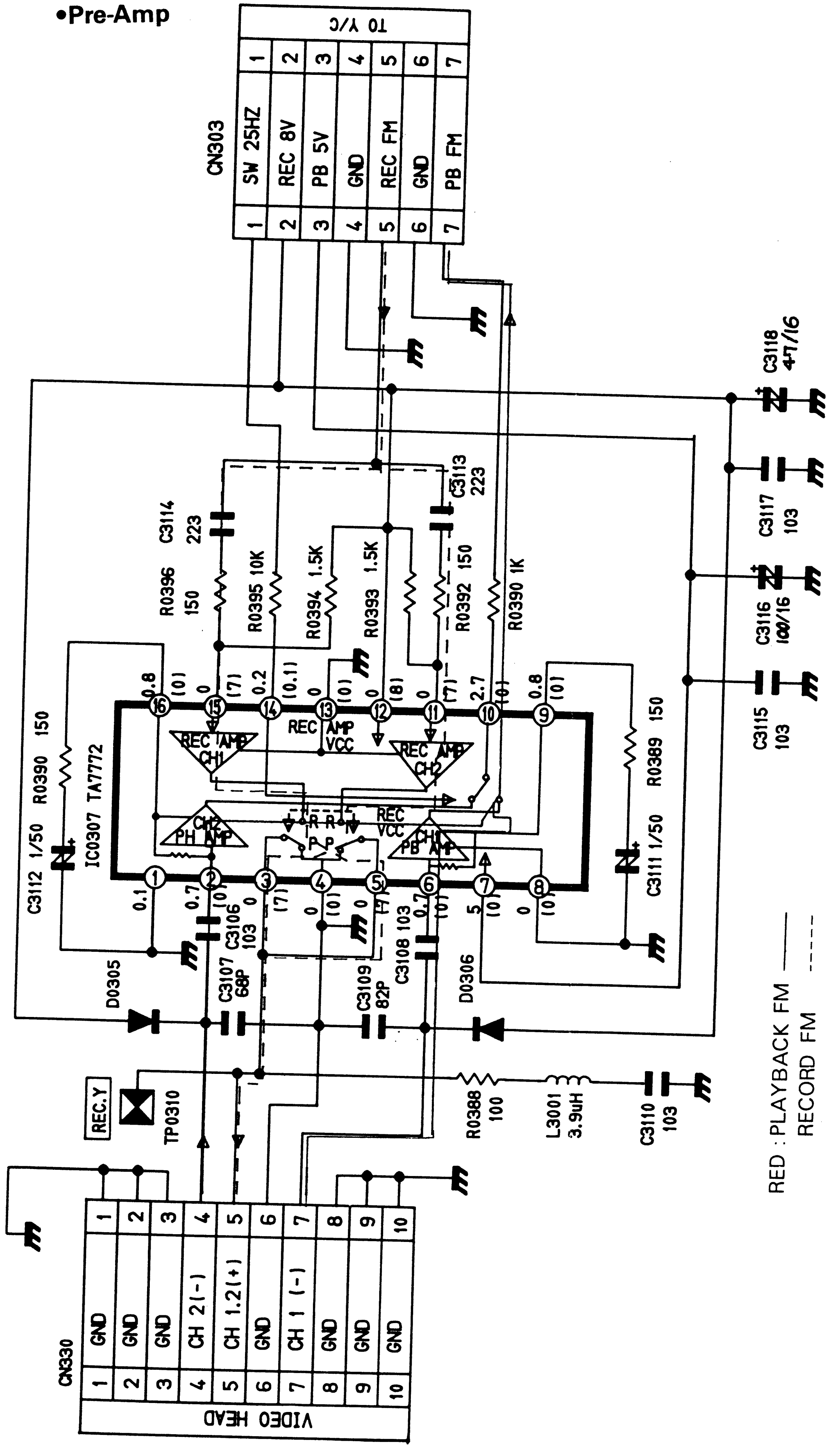
MODE	IC0306						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	3	0	0	0	0	0
PIN 2	0	3	0	0	0	0	0
PIN 3	0	9	0	0	0	0	0
PIN 4	0	0	0	0	0	0	0
PIN 5	0	0	0	0	0	0	0
PIN 6	5	5	5	5	5	5	5
PIN 7	0	0	0	0	0	0	0
PIN 8	5.5	5.4	5.4	5.4	5.4	5.4	5.4
PIN 9	0	0	0	0	0	0	0
PIN 10	2	2	2	2	2	2	2
PIN 11	0	0	0	0	0	0	0
PIN 12	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN
PIN 13	4.2	4.2	4.2	4.2	4.2	4.2	4.2
PIN 14	2	2	2	2	2	2	2
PIN 15	0	0	0	0	0	0	0
PIN 16	0.2	0.2	3.8	0.2	0.2	3.8	3.8
PIN 17	0.2	0.2	3.8	0.2	0.2	3.8	3.8
PIN 18	0	OPEN	3	0	0	3	3
PIN 19	5	5	5	5	5	5	5
PIN 20	0.2	0.2	5	0.2	0.2	5	5
PIN 21	0	1.6	1.2	0	0	1.2	1.2
PIN 22	0.2	0.2	5	0.2	0.2	5	5
PIN 23	0	OPEN	0	0	0	0	0
PIN 24	0	0	0	0	0	0	0
PIN 25	0	0	0	0	0	0	0
PIN 26	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN
PIN 27	0	0	0	0	0	0	0
PIN 28	0	0	0	0	0	0	0
PIN 29	0	0	0	0	0	0	0
PIN 30	0	0	0	0	0	0	0
PIN 31	0	0	0	0	0	0	0
PIN 32	0	0	0	0	0	0	0
PIN 33	0	0	0	0	0	0	0
PIN 34	5	5	5	5	5	5	5
PIN 35	0	0	0	0	0	0	0
PIN 36	3	3	3	3	3	3	3
PIN 37	0	0	0	0	0	0	0
PIN 38	0	0	0	0	0	0	0
PIN 39	0	0	0	0	0	0	0
PIN 40	0.3	4.6	0.3	0.3	0.3	0.3	0.3

10-6. Audio

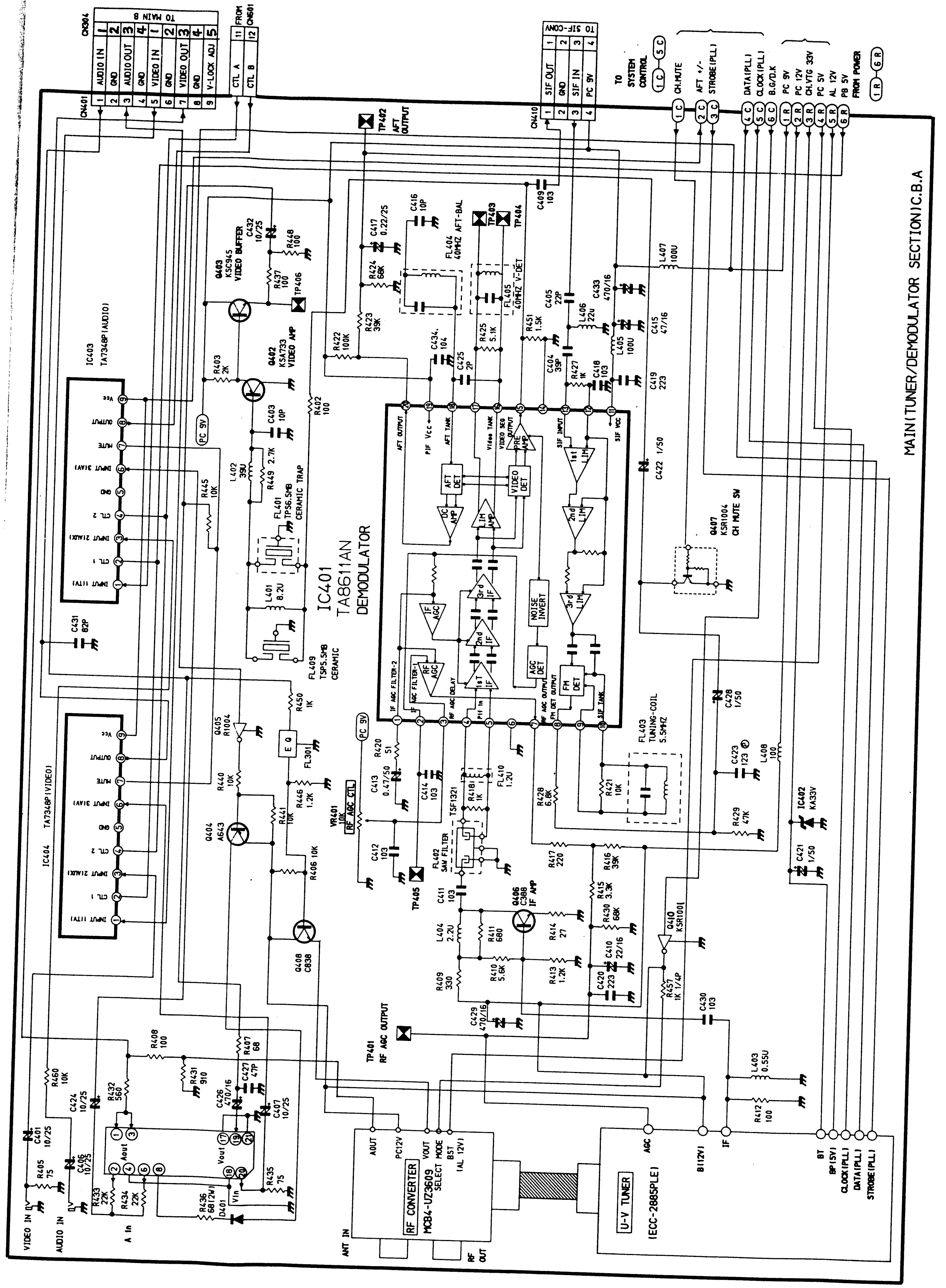
•Audio


FROM CN301
REC 9V
PC 9V
PB 5V
AUDIO MUTE
CN401
MAIN-A
CN304(A)
1 AUDIO OUT
2 GND
3 AUDIO IN
4 GND
TP0502
TP0501
C0511 472
L0501 22UH
C0512 153
C0510 103
R0511 820
C0523 1U/50
R0510 22K
R0509 8.2K
R0507 22K
C0509 10UF
R0506 3.3K
R0508 4.7M
C0524
R0512 33K
R0513 3.3K
C0513 103
L0502 15mH
R0514 270
C0515 1U/50
R0516 22K
C0516 47U/16
C0517 10U/25
R0520 150K
C0508 1U/50
VR0501 10K
PB ADJUST
R0502 10K
R0503 330K
C0505 103
C0506 220/16
R0504 120
C0502 1U/50
C0501 223
C0518 100U/16
C0519 682
L0503 100UH
C0520 472
R0517 15K
R0518 47
R0519 2.2
Q0501 D261
L0504
IC0501 LA7297
POWER ON/OFF MUTE
ALC DET
LINE AMP
ALC
EE MUTE
PB
FE REC
PB MUTE
EE REC
REC MUTE
REC AMP
LP SW CONT
EQ AMP
RIPPLE FILTER
EP SW CONT
MUTING CONT
PB/EE CONT
REC/EE CONT
CURRENT PROTECTOR
TP0503
C0503 182
R0501 47K
VR0502 200K
REC.BIAS
C0522 220P
C0521 473 MDX
CN302
DECK
1 R/P HEAD(P)
2 GND
3 GND
4 R/P HEAD(R)
5 GND
6 A/E HEAD
7 GND
8 F/E HEAD

•Pre-Amp


TO Y/C
CN303
SW 25HZ
REC 8V
PB 5V
GND
REC FM
GND
PB FM
IC0307 TA7772
REC AMP CH1
REC AMP VCC
REC AMP CH2
CH2 PB AMP
CH1 PB AMP
REC VCC
C3112 1/50
R0390 150
R0396 150
C3114 223
R0395 10K
R0394 1.5K
R0393 1.5K
R0392 150
R0390 1K
C3113 223
C3118 47/16
C3117 103
C3116 100/16
C3115 103
R0389 150
C3111 1/50
C3106 103
C3107 68P
C3109 82P
C3108 103
D0305
D0306
REC.Y
TP0310
R0388 100
L3001 3.9uH
C3110 103
CN330
VIDEO HEAD
GND
CH 2(-)
CH 1.2(+)
CH 1 (-)
RED : PLAYBACK FM
RECORD FM

• Tuner .


MAIN(TUNER/DEMODULATOR SECTION)C.B.A
CN304
TO MAIN B
CN401
AUDIO IN
AUDIO OUT
VIDEO IN
VIDEO OUT
V-LOCK ADJ
FROM CN601
CTL A
CTL B
TO SIF-CONV
CN410
SIF OUT
SIF IN
PC 9V
TO SYSTEM CONTROL
CH.MUTE
AFT +/-
STROBE(PLL)
DATA(PLL)
CLOCK(PLL)
B.G/D.K
PC 12V
CH.VTG 33V
AL 12V
PB 5V
FROM POWER
IC403 TA7348P(AUDIO)
IC404 TA7348P(VIDEO)
Q403 KSC945 VIDEO BUFFER
Q402 KSA733 VIDEO AMP
IC401 TA8611AN DEMODULATOR
FL401 TP56.5MB CERAMIC TRAP
FL409 TSP5.5MB CERAMIC
FL404 40MHZ AFT-BAL
FL405 40MHZ V-DET
FL403 TUNING-COIL 5.5MHZ
FL402 SAW FILTER TSF1321
Q407 KSR1004 CH MUTE SW
Q405 KSR1004
Q404 A643
Q408 C838
Q406 C388 IF AMP
Q410 KSR1001
IC402 KA33V
VR401 10K RF AGC CTL
TP401 RF AGC OUTPUT
TP402 AFT OUTPUT
TP403
TP404
TP405
TP406
RF CONVERTER MCB4-UZ3609
AOUT
PC12V
VOUT
SELECT MODE
BST
U-V TUNER (ECC-288SPLE)
AGC
B(12V)
IF
BT
BP(5V)
CLOCK(PLL)
DATA(PLL)
STROBE(PLL)
VIDEO IN
AUDIO IN
A In
ANT IN
RF OUT

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 401						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	5.8	5.8	5.8	5.8	5.8	5.8	5.8
PIN 2	5.8	5.8	5.8	5.8	5.8	5.8	5.8
PIN 3	3	3	3	3	3	3	3
PIN 4	4	4	4	4	4	4	4
PIN 5	4	4	4	4	4	4	4
PIN 6	0	0	0	0	0	0	0
PIN 7	4	4	4	4	4	4	4
PIN 8	4	4	4	4	4	4	4
PIN 9	6	6	6	6	6	6	6
PIN 10	6	6	6	6	6	6	6
PIN 11	9	9	9	9	9	9	9
PIN 12	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PIN 13	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PIN 14	0	0	0	0	0	0	0
PIN 15	3.8	3.8	3.8	3.8	3.8	3.8	3.8
PIN 16	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 17	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 18	4	4	4	4	4	4	4
PIN 19	9.0	9	9	9	9	9	9
PIN 20	5	5	5	5	5	5	5

Main (Tuner/Demodulator) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 403						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 2	3.8	3.8	3.8	3.8	3.8	3.8	3.8
PIN 3	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 4	0	0	0	0	0	0	0
PIN 5	0	0	0	0	0	0	0
PIN 6	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 7	0.2	0	4	0.2	0.2	4	4
PIN 8	5.4	5.4	5.4	5.4	5.4	5.4	5.4
PIN 9	9.0	9	9	9	9	9	9

Main (Tuner/Demodulator) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 404						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 2	3.8	3.8	3.8	3.8	3.8	3.8	3.8
PIN 3	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 4	0	0	0	0	0	0	0
PIN 5	0	0	0	0	0	0	0
PIN 6	6.2	6.2	6.2	6.2	6.2	6.2	6.2
PIN 7	0.2	0	4	0.2	0.2	4	4
PIN 8	5.6	5.6	5.6	5.6	5.6	5.6	5.6
PIN 9	9.2	9.2	9.2	9.2	9.2	9.2	9.2

Main (Tuner/Demodulator) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	STOP			REC			PLAY			REW			F. FWD			REV. S			FWD. S		
TR NO.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 402	3.8	0	3.2	3.8	0	3.2	3.8	0	3.2	3.8	0	3.2	3.8	0	3.2	3.8	0	3.2	3.8	0	3.2
Q 403	3.3	9	4	3.3	9	4	3.3	9	4	3.3	9	4	3.3	9	4	3.3	9	4	3.3	9	4
Q 404	10	0	10	10	0	10	10	10	9.2	10	0	10	10	0	10	10	10	9.2	10	10	9.2
Q 405	0	10	0.2	0	10	0.2	0	0	5	0	10	0.2	0	10	0.2	0	0	5	0	0	5
Q 406	0.9	7.2	0.2	0.9	7.2	0.2	0.9	7.2	0.2	0.9	7.2	0.2	0.9	7.2	0.2	0.9	7.2	0.2	0.9	7.2	0.2
Q 407	0	2.9	0	0	2.9	0	0	2.9	0	0	2.9	0	0	2.9	0	0	2.9	0	0	2.9	0
Q 408	0.8	10	1.4	0.8	10	1.4	0.8	10	1.4	0.8	10	1.4	0.8	10	1.4	0.8	10	1.4	0.8	10	1.4

Main (Tuner/Demodulator) C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	IC 701						
PIN NO.	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	30	30	30	30	30	30	30
PIN 2	30	30	30	30	30	30	30
PIN 3	30	30	30	30	30	30	30
PIN 4	30	30	30	30	30	30	30
PIN 5	30	30	30	30	30	30	30
PIN 6	30	30	30	30	30	30	30
PIN 7	30	30	30	30	30	30	30
PIN 8	30	30	30	30	30	30	30
PIN 9	30	30	30	30	30	30	30
PIN 10	30	30	30	30	30	30	30
PIN 11	30	30	30	30	30	30	30
PIN 12	30	30	30	30	30	30	30
PIN 13	30	30	30	30	30	30	30
PIN 14	30	30	30	30	30	30	30
PIN 15	30	30	30	30	30	30	30
PIN 16	30	30	30	30	30	30	30
PIN 17	30	30	30	30	30	30	30
PIN 18	31.2	31.2	31.2	31.2	31.2	31.2	31.2
PIN 19	0	0	0	0	0	0	0
PIN 20	5.1	5.1	5.1	5.1	5.1	5.1	5.1
PIN 21	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 22	0	0	0	0	0	0	0
PIN 23	0.5	0.5	5.0	0.5	0.5	0.5	0.5
PIN 24	5.0	5.3	5.3	5.3	5.3	5.3	5.3
PIN 25	5.3	5.3	5.3	5.3	5.3	5.3	5.3
PIN 26	30	30	30	30	30	30	30
PIN 27	30	30	30	30	30	30	30
PIN 28	30	30	30	30	30	30	30

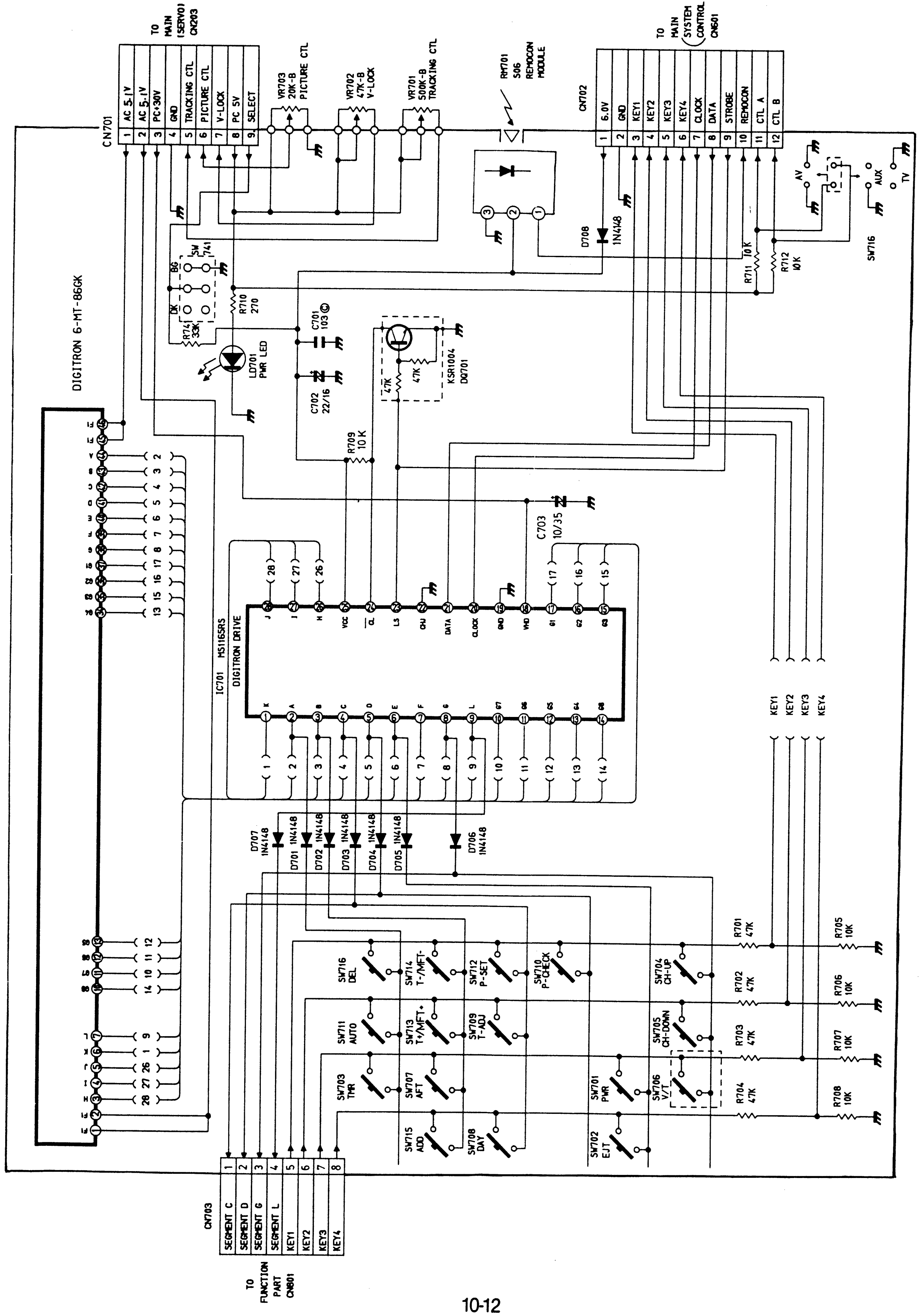
Timer/Input Key C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

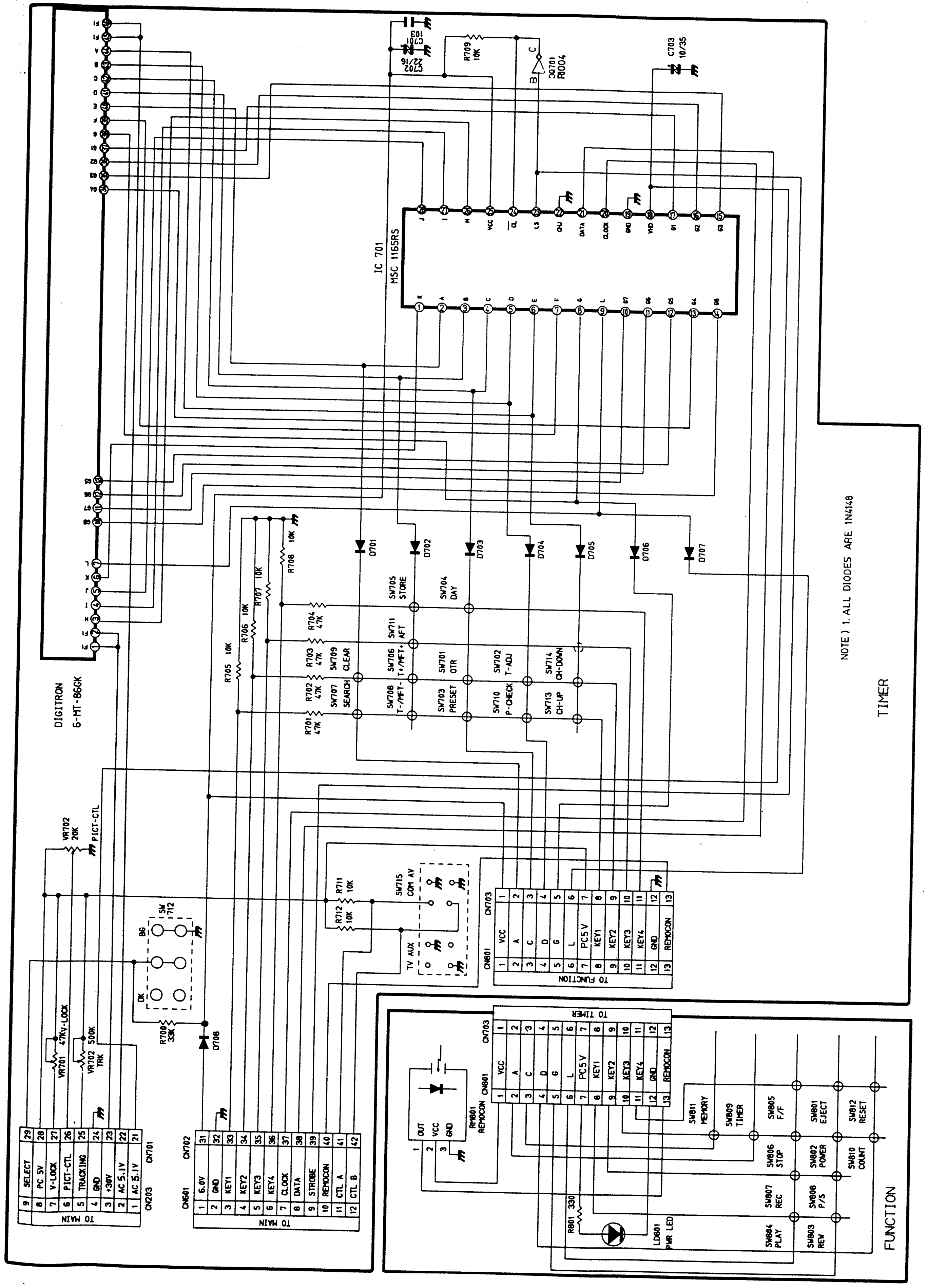
MODE	STOP			REC			PLAY			REW			F.FWD			REV S.			FWD S.		
Tr No.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 701	0	5.0	0.5	0	5.0	0.5	0	5.0	0.5	0	5.0	0.5	0	5.0	0	0	5.0	0.5	0	5.0	0.5

Timer/Input Key C.B.A

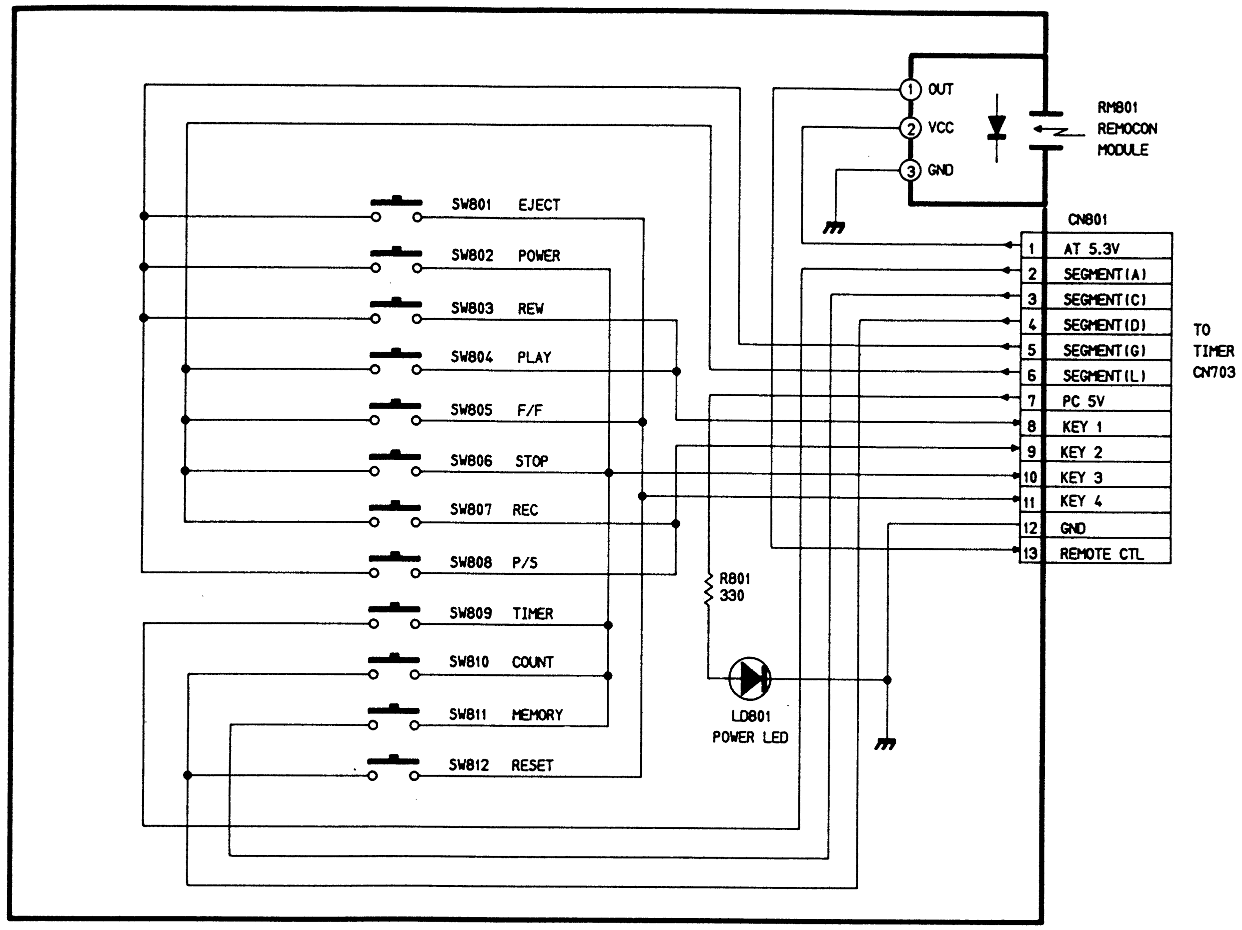
• Timer/Input Key (VQ-720.VR-4000)


TO MAIN (SERVO) CN203
CN701
1 AC 5.1V
2 AC 5.1V
3 PC+30V
4 GND
5 TRACKING CTL
6 PICTURE CTL
7 V-LOCK
8 PC 5V
9 SELECT
VR703 20K-B PICTURE CTL
VR702 47K-B V-LOCK
VR701 500K-B TRACKING CTL
RM701 REMOCON MODULE
TO MAIN (SYSTEM CONTROL) CN601
CN702
1 6.0V
2 GND
3 KEY1
4 KEY2
5 KEY3
6 KEY4
7 CLOCK
8 DATA
9 STROBE
10 REMOCON
11 CTL A
12 CTL B
D708 1N4148
R711 10K
R712 10K
AV
AUX
TV
SW716
DIGITRON 6-MT-86GK
SW741
BG
DK
R741 33K
R710 270
LD701 PWR LED
C701 103
C702 22/16
KSR1004 DQ701
47K
47K
R709 10K
C703 10/35
IC701 M5116SR5 DIGITRON DRIVE
KEY1
KEY2
KEY3
KEY4
D707 1N4148
D701 1N4148
D702 1N4148
D703 1N4148
D704 1N4148
D705 1N4148
D706 1N4148
SW716 DEL
SW714 T-/MFT-
SW712 P-SET
SW710 P-CHECK
SW704 CH-UP
SW711 AUTO
SW713 T+/MFT+
SW709 T-ADJ
SW705 CH-DOWN
SW703 TMR
SW707 AFT
SW701 PWR
SW706 V/T
SW715 ADD
SW708 DAY
SW702 EJT
R701 47K
R702 47K
R703 47K
R704 47K
R705 10K
R706 10K
R707 10K
R708 10K
CN703
1 SEGMENT C
2 SEGMENT D
3 SEGMENT G
4 SEGMENT L
5 KEY1
6 KEY2
7 KEY3
8 KEY4
TO FUNCTION PART CN801

• Timer/Input Key (VQ-721)

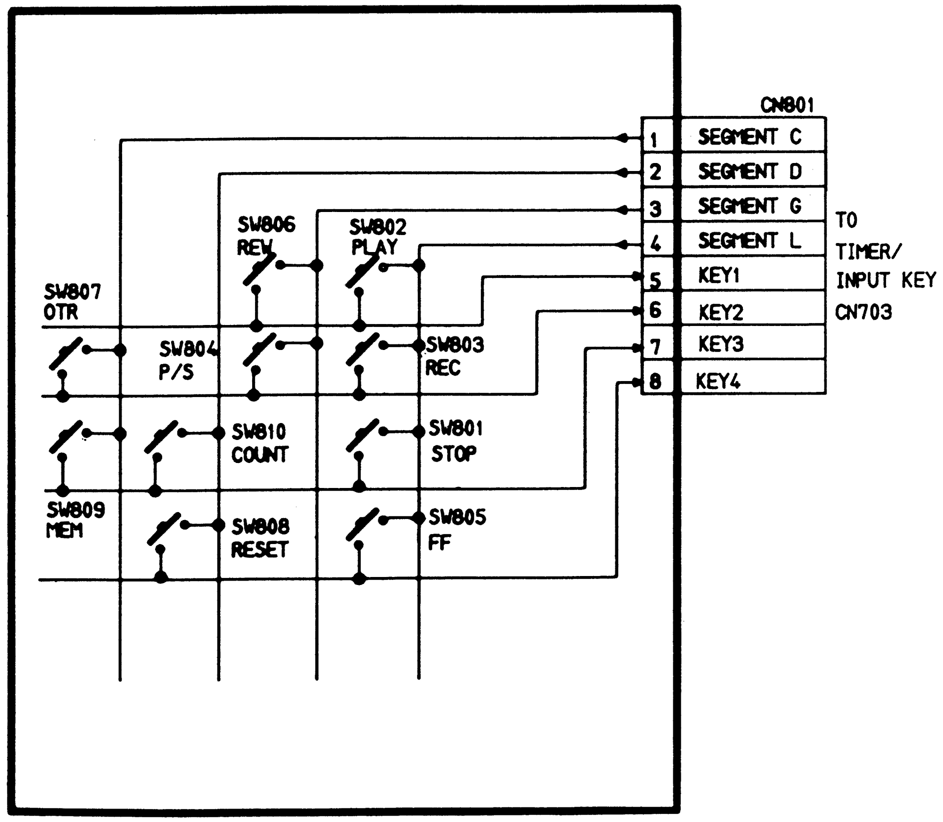

C701 103
C702 22/16
R709 10K
DQ701 R1004
C703 10/35
IC 701 M5C 1165R5
D701
D702
D703
D704
D705
D706
D707
NOTE) 1. ALL DIODES ARE 1N4148
TIMER
DIGITRON 6-MT-86GK
SW705 STORE
SW704 DAY
SW711 AFT
SW706 T+/MFT+
SW709 CLEAR
SW701 OTR
SW702 T-ADJ
SW714 CH-DOWN
SW707 SEARCH
SW708 T-/MFT-
SW703 PRESET
SW710 P-CHECK
SW713 CH-UP
R701 47K
R702 47K
R703 47K
R704 47K
R705 10K
R706 10K
R707 10K
R708 10K
VR702 20K PICT-CTL
VR701 47K V-LOCK
VR702 500K TRK
R700 33K
D708
SW712
BG
DK
R711 10K
R712 10K
SW715 COM AV
TV AUX
CN703
TO FUNCTION
CN801
TO TIMER
RM801 REMOCON
SW811 MEMORY
SW809 TIMER
SW805 F/F
SW801 EJECT
SW812 RESET
SW806 STOP
SW802 POWER
SW810 COUNT
SW807 REC
SW808 P/S
SW804 PLAY
SW803 REW
R801 330
LD801 PWR LED
FUNCTION
CN203 CN701 TO MAIN
CN601 CN702 TO MAIN

• Function Switch (VQ-720.VR-4000)



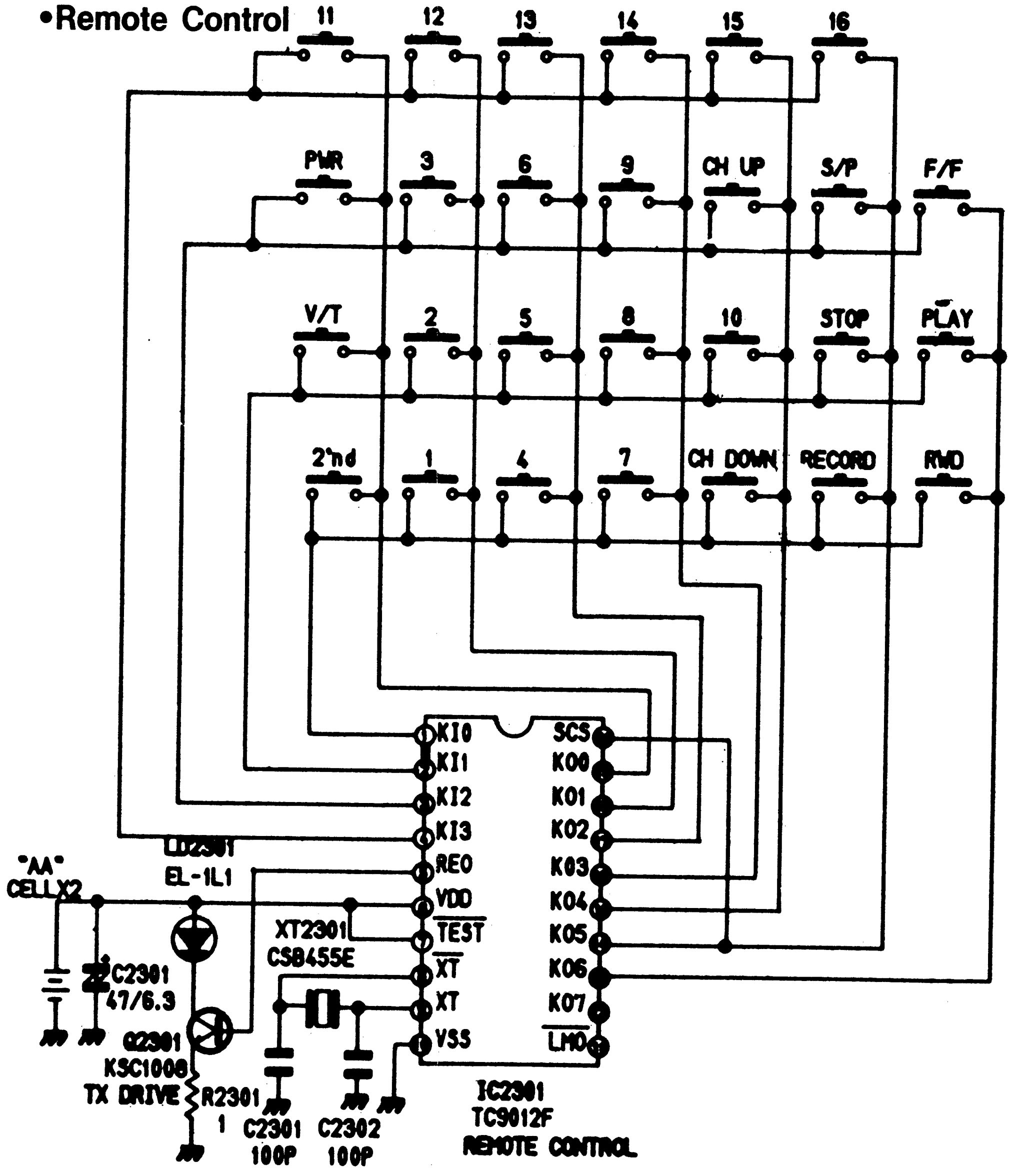
1 OUT
2 VCC
3 GND
RM801
REMOCON
MODULE
SW801 EJECT
SW802 POWER
SW803 REW
SW804 PLAY
SW805 F/F
SW806 STOP
SW807 REC
SW808 P/S
SW809 TIMER
SW810 COUNT
SW811 MEMORY
SW812 RESET
R801
330
LD801
POWER LED
CN801
1 AT 5.3V
2 SEGMENT(A)
3 SEGMENT(C)
4 SEGMENT(D)
5 SEGMENT(G)
6 SEGMENT(L)
7 PC 5V
8 KEY 1
9 KEY 2
10 KEY 3
11 KEY 4
12 GND
13 REMOTE CTL
TO
TIMER
CN703

• Function Switch (VQ-721)



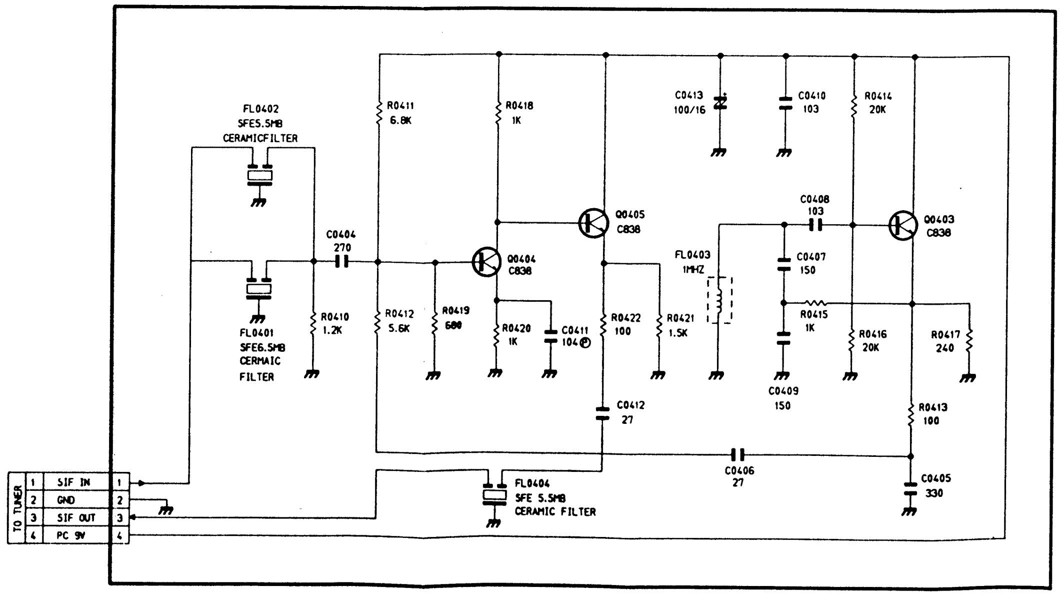
CN801
1 SEGMENT C
2 SEGMENT D
3 SEGMENT G
4 SEGMENT L
5 KEY1
6 KEY2
7 KEY3
8 KEY4
TO
TIMER/
INPUT KEY
CN703
SW807
OTR
SW806
REW
SW802
PLAY
SW804
P/S
SW803
REC
SW810
COUNT
SW801
STOP
SW809
MEM
SW808
RESET
SW805
FF

•Remote Control



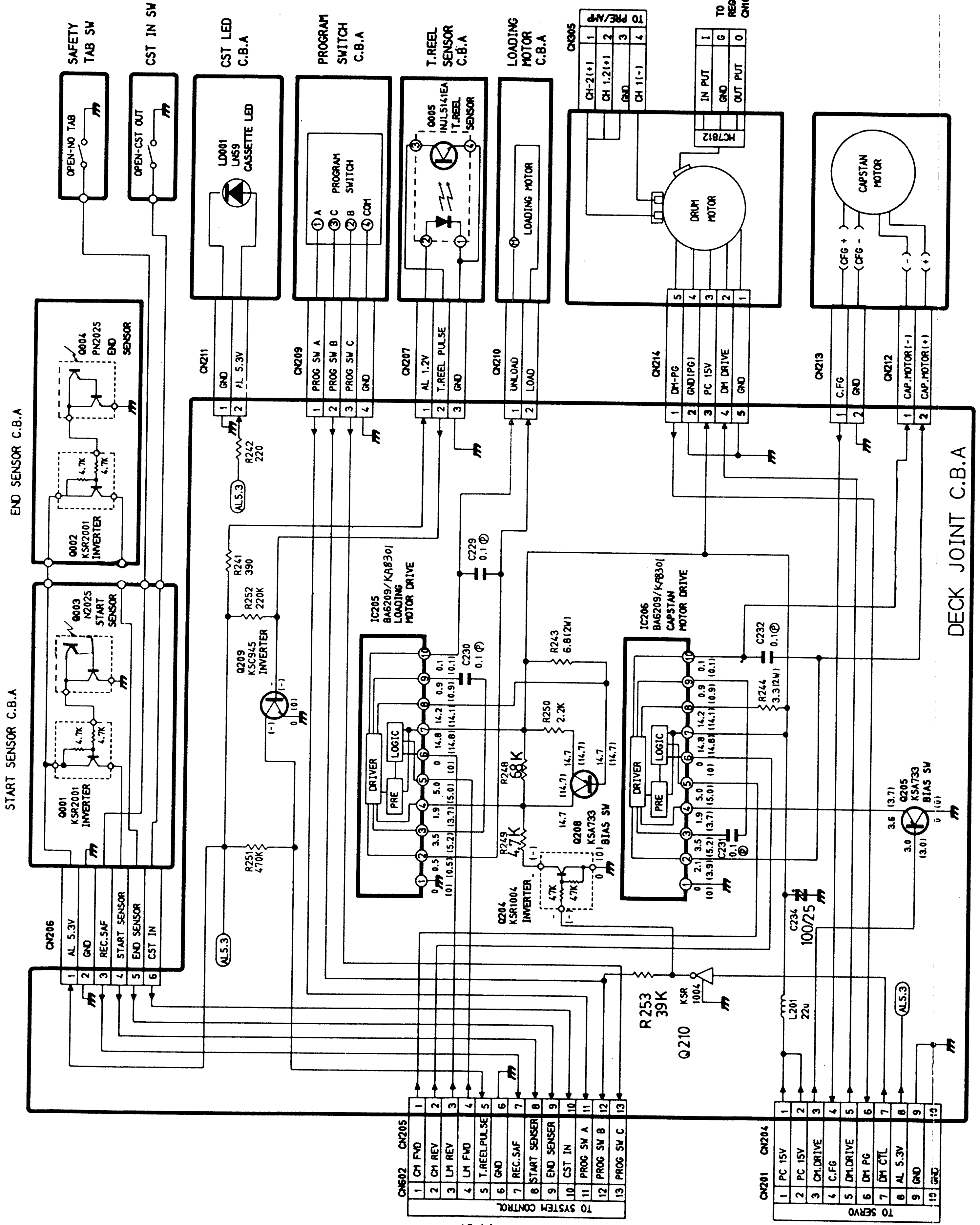
11
12
13
14
15
16
PWR
3
6
9
CH UP
S/P
F/F
V/T
2
5
8
10
STOP
PLAY
2'nd
1
4
7
CH DOWN
RECORD
RWD
KI0
KI1
KI2
KI3
REO
VDD
TEST
XT
XT
VSS
SCS
KO0
KO1
KO2
KO3
KO4
KO5
KO6
KO7
LMO
LD2301
EL-1L1
"AA"
CELLX2
C2301
47/6.3
Q2301
KSC1008
TX DRIVE
R2301
1
XT2301
CSB455E
C2301
100P
C2302
100P
IC2301
TC9012F
REMOTE CONTROL

•SIF-Converter



TO TIMER
1 SIF IN 1
2 GND 2
3 SIF OUT 3
4 PC 9V 4
FL0402
SFE5.5MB
CERAMICFILTER
FL0401
SFE6.5MB
CERMAIC
FILTER
C0404
270
R0410
1.2K
R0411
6.8K
R0412
5.6K
R0419
680
R0418
1K
Q0404
C838
R0420
1K
C0411
104Ⓟ
Q0405
C838
R0422
100
R0421
1.5K
C0412
27
C0413
100/16
C0410
103
R0414
20K
FL0403
1MHZ
C0408
103
C0407
150
R0415
1K
C0409
150
R0416
20K
Q0403
C838
R0417
240
R0413
100
C0406
27
C0405
330
FL0404
SFE 5.5MB
CERAMIC FILTER

Deck Joint


SAFETY TAB SW
CST IN SW
CST LED C.B.A
PROGRAM SWITCH C.B.A
T.REEL SENSOR C.B.A
LOADING MOTOR C.B.A
TO PRE/AMP
TO REGULATOR CN102
OPEN-NO TAB
OPEN-CST OUT
LD001 LN59 CASSETTE LED
PROGRAM SWITCH
Q005 INJL5141EA T.REEL SENSOR
LOADING MOTOR
CN305
CH-2(+)
CH 1.2(+)
GND
CH 1(-)
IN PUT
GND
OUT PUT
MC7812
DRUM MOTOR
CAPSTAN MOTOR
CFG +
CFG -
END SENSOR C.B.A
Q004 PN202S END SENSOR
Q002 KSR2001 INVERTER
START SENSOR C.B.A
Q003 PN202S START SENSOR
Q001 KSR2001 INVERTER
CN211
GND
AL 5.3V
CN209
PROG SW A
PROG SW B
PROG SW C
GND
CN207
AL 1.2V
T.REEL PULSE
GND
CN210
UNLOAD
LOAD
CN214
DM-PG
GND(PG)
PC 15V
DM DRIVE
GND
CN213
C.FG
GND
CN212
CAP.MOTOR(-)
CAP.MOTOR(+)
R242 220
AL5.3
R241 390
R252 220K
Q209 KSC945 INVERTER
R251 470K
C229 0.1
IC205 BA6209/KA8301 LOADING MOTOR DRIVE
C230 0.1
R243 6.8(2W)
R250 2.2K
R248 68K
R249 47K
Q208 KSA733 BIAS SW
Q204 KSR1004 INVERTER
DRIVER
PRE
LOGIC
IC206 BA6209/KA8301 CAPSTAN MOTOR DRIVE
C232 0.1
R244 3.3(2W)
C231 0.1
Q205 KSA733 BIAS SW
C234 100/25
DECK JOINT C.B.A
CN206
AL 5.3V
GND
REC.SAF
START SENSOR
END SENSOR
CST IN
R253 39K
KSR 1004
Q210
L201 22u
CN602 CN205
CM FWD
CM REV
LM REV
LM FWD
T.REEL PULSE
GND
REC.SAF
START SENSOR
END SENSOR
CST IN
PROG SW A
PROG SW B
PROG SW C
TO SYSTEM CONTROL
CN201 CN204
PC 15V
PC 15V
CM.DRIVE
C.FG
DM.DRIVE
DM PG
DM CTL
AL 5.3V
GND
GND
TO SERVO

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE / PIN NO.	IC 205						
	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	0	0	0	0	0	0
PIN 2	0.5	0.5	0.5	0.5	0.5	0.5	0.5
PIN 3	0.9	0.9	0.9	0.9	0.9	0.9	0.9
PIN 4	2.3	14.8	14.7	14.7	14.7	2.2	14.7
PIN 5	5.0	14.7	5.0	5.0	5.0	5.0	5.0
PIN 6	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PIN 7	15.0	14.8	14.8	14.7	14.7	14.7	14.7
PIN 8	15.0	14.8	14.8	14.7	14.7	14.7	14.7
PIN 9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
PIN 10	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Sub Servo C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE / PIN NO.	IC 206						
	STOP	REC	PLAY	REW	F.FWD	REV S.	FWD S.
PIN 1	0	0	0	0	0	0	0
PIN 2	0.5	3.9	2.1	0.1	10.1	0.1	9.5
PIN 3	0.9	5.2	3.5	0.9	11.7	0.9	10.9
PIN 4	1.2	3.7	1.9	10.3	10.2	10.0	9.0
PIN 5	5.0	5.0	5.0	0	5.0	0	5.0
PIN 6	5.0	0	0	5.0	0	5.0	0
PIN 7	14.9	14.8	1.48	14.7	14.7	14.7	14.7
PIN 8	14.9	14.1	14.2	13.8	13.8	13.8	13.8
PIN 9	0.9	0.9	0.9	11.8	0.9	11.0	0.9
PIN 10	0.5	0.1	0.1	9.9	0.1	9.3	0.1

Sub Servo C.B.A

REV S. : REVERSE SEARCH
FWD S.: FORWARD SEARCH

MODE	STOP			REC			PLAY			REW			F.FWD			REV S.			FWD S.		
Tr No.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
Q 204	0	0	4.9	0	14.7	0	0	14.7	0	0	14.7	0	0	14.7	0	0	0	4.9	0	14.7	0
Q 205	1.0	0	12.6	3.7	0	3.0	3.6	0	3.0	8.9	0	8.3	8.8	0	8.2	9.5	0	8.7	9.3	0	8.6
Q 208	14.9	2.2	14.9	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	2.2	14.7	14.7	14.7	14.7
Q 209	0	5.1	0.1	0	–	–	0	–	–	0	–	–	0	–	–	0	–	–	0	–	–

Sub Servo C.B.A